PROCEEDINGS OF NATIONAL SEMINAR
ON
DIMENSIONAL STONE QUARRYING,
ENVIRONMENTAL ISSUES
AND
COMMUNITY WELFARE

HELD ON
17th JANUARY 2015

At
THE LALIT ASHOK’
KUMARA KRUPA HIGH GROUNDS
BENGALURU

ORGANIZED BY
FEDERATION OF INDIAN GRANITE & STONE INDUSTRY
&
GEOLOGICAL SOCIETY OF INDIA

SUPPORTED BY
GOVERNMENT OF KARNATAKA
&
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GEOLOGICAL SOCIETY OF INDIA
BENGALURU
APRIL, 2015
INAUGURAL SESSION

Invocation

Dignitaries On Dais
Lighting of Lamp by Chief Guest Sri.M.Madan Gopal, Addl Chief Secretary, GoK

Releasing of Souvenir Volume
Welcome Address Sri.R.H.Sawkar, Secretary, Geological Society of India

In his welcome address, Shri. R.H. Sawkar reiterated that in spite of the Geological Society of India being the foremost Society of Geoscientists in the last 60 years publishing articles of very high standard on geosciences in its journal yet little has been done by the Society on the dichotomy of dimensional stone granite deposits. As on date, dimensional stones being classified as Minor Mineral, governing policies and rules on their quarrying and marketing are quite varying and different from State to State. On one hand, the value of stone deposits both in terms of resources and export earnings is quite high; whereas the industry suffers on account of lack of uniformity in application and execution of laws and policies. On the other hand, unlike major minerals, assigning of UNFC codes from 334 to 111 to resources of dimensional stones is beset with the lingering uncertainty in marketing which is largely based on aesthetic qualities of consumers. The earliest venture of quarrying red granites in Ilkal sector, Karnataka by Shri.Veeramani witnessed the State implementing the Karnataka Minor Mineral Concession Rules. The perpetual market demand of metals and the streamlined economic mining operations of metals make disposal of mineral assets through tender / auction much easier and feasible. In spite of having tried several methods of mechanism on dispensation of mineral assets such as first come first served basis, tender, auction, tender cum auction, PPP etc by several State and Central Firms such as Chitradurga Copper Company, Bharath Gold Mines, Hutti Gold Mines, APMDC etc, yet a viable, standardized model in consonance with the nature of occurrence of deposits is to be arrived at. Hence the immediate requirement for a scientific, pragmatic and optimal dispensation of mineral assets by States as well as by the Country merits priority attention from all stake holders and keeping this in view, for the first time GSI and FIGSI have joined together and with the active support and
involvement of the GOK and CAPEXIL, brought all those concerned with the industry on to a common platform by way of this National Seminar.

Address of Shri. R. Sekar, President, FIGSI

The National Seminar is memorable on a singular issue i.e. bringing on the Members of FIGSI and others connected with the Industry face to face with the administrators and policy makers of the Governments, both State and Central, the former for highlighting the problems of the Industry and the latter, for advocating the reciprocate measures taken by the Governments. FIGSI expresses its whole hearted, sincere thanks to the Hon’ble Chief Minister of Karnataka Shri. Siddaramaih, the Secretary, Department of Mines and officials of the Directorate of Mines and Geology, Government of Karnataka for having cleared more than 150 quarry leases within a period of two months, when they were pending for more than 20 years. The positive measure taken by the DMG, GoK in acceding to the request of the Industry in reducing the royalty by 50% for the granite materials to be consumed by the processing units located within the state of Karnataka is gratefully acknowledged. When Karnataka had the unique distinction of being the pioneer in commencing the granite quarrying and exporting activity in the country with the establishment of premium varieties such as the Ilkal Red, Chamrajnagar Black and Kanakapur Multi-colour in international markets- Japan, Italy and European countries, it is disheartening to note and record that the State has slipped from its No.1 position to 4th position, conceding the top slot to the State of Andhra Pradesh. In the last couple of years, large number of quarry leases is being granted in a time bound manner in Telegana and A.P. One of the Rules of GCDR, 1999 is categorical on easy terms of granting quarry leases with assured renewal in a time bound manner. While granting of quarry leases in time is the foremost earnest request of FIGSI to the GoK, two other issues that merit immediate attention of authorities are (i) levying of royalty on tonnage basis rather than on measurements and (ii) way permits for transport of granite blocks with
adequate validity period. Non-uniformity in taking of measurements of blocks, at different points of time and at different places (across State boundaries) and shorter duration of way-permits have put in nagging hurdles and obstacles in an otherwise smooth operations. Another major hurdle that is being faced by the Industry is granting of no quarry leases in forest areas. When large tracks of areas having major mineral deposits in forest areas are being leased out, the barren rocky terrains in forest areas are not permitted for quarrying in spite of the clear guide lines in GCDR for proper quarry closing and reclamation of the area for greenery. In addition, the modern quarrying techniques are devoid of any blasting process and adequate measures do exist in safe guarding the environment. Total stoppage of granting of quarrying leases in recent times in Karnataka has its major repercussion in the form of severe crunch for raw material for the processing plants in the State. Blocks are being brought from adjoining States, thus creating an imbalance in the economy of operations and certain of the processing units are at the verge of closure. When the Industry has an export earnings of more than Rs.12000 crores in 2013-14 with employment generation of more than 15 lakhs and an investment outlay of Rs.15000 crores, it warrants due recognition with the implementation of uniform policy guidelines throughout the country, which is feasible only through re-categorization to major mineral status from the current minor mineral. The purpose of the seminar is to dwell on this aspect in greater detail. For major scientific and technical input in to this aspect, FIGSI has sought the advice and guidelines of The Geological Society. Dr.H.K.Gupta, President, GSI and Dr.R.H.Sawkar, Secretary, GSI have readily accepted to FIGSI’s request and FIGSI is immensely grateful to them. In this context, FIGSI takes great pride and pleasure in announcing the procurement of 31 acres of land in Sulegiri ( a tri-junctional area having equi-distant access from three states- Tamil Nadu-Andhra Pradesh-Karnataka), Hosur Taluk, Tamilnadu for setting up a R & D center, wherein the proposed activities are training and fine tuning of artisans and sculptors, training of personnel in scientific quarrying operations, setting up a international standard laboratory for analyzing granite samples on their polishability, engineering properties and usage slots, setting up of to international standard a Stone Gallery, exhibiting samples not only of Indian origin but also of elsewhere in the world and also an accreditation center for certifying products to their quality. FIGSI understands that this germination of an ambitious project is no mean task and requests the members, Governments, Societies, Allied Industries etc for liberal contribution, support and logistical input. Through this National Seminar, Members of FIGSI assure the Governments scrupulous following of mining laws, sustainable mining methods and safeguarding of environment and ecosystem not only to achieve the export targets but also to sustain the pinnacle of niche achieved by the Industry in the International arena.
Address of Shri. Rakesh Sharma, Vice President, FIGSI

When international and domestic markets of dimensional stones are in upswing, it is rather unfortunate that the Industry in India is facing multitude of problems – dearth for quality blocks, the basic raw material for the processing units, non-granting or non-renewal of quarry leases, absence of financing from banking sector, lack of power, undue delay in getting clearances from forest, pollution board, environment etc. Net cumulative effect is that the Indian stone industry is unable to effectively compete in the international market. Many 100% EOU’s are struggling to remain themselves afloat in the present market scenario. In case these units are given SEZ status, it is possible that things may improve. Indian Stone Industry is capable of achieving four times more than the present targets if the hurdles faced by the industry are addressed in a fruitful way by the dignitaries who are gracious enough to make their presence in this National Seminar.
One can imagine the pent-up of emotions – of stress, strain and uncertainty- when the granite industry was started way back in 1983 without knowing the direction in which it would embark upon, without knowing the outcome of the international fair STONA held in Bangalore, without knowing the market trend of the future and the global competitiveness. If at all granite industry had withstood those periods of toil and turbulence, then the credit of sustainability was primarily due to the unstinted support of Central and State Governments, especially the Governments of Karnataka and Andhra Pradesh & Telegana. In fact FIGSI (the then AIGSA) is eternally thankful to the Governments of AP and Telegana since their Ministers of Mines, Commerce and Industry had made it a point to attend all STONA Fairs held so far and also invited FIGSI to conduct the STONA in Hyderabad at their cost. It is heartening to note that the Industry which had a market turn over of about Rs60 crores in 1983-84, has grown now to about Rs12 crores and it is apt at this juncture to have such an important National Seminar, an interactive exercise amongst State, Central bodies, academicians, geoscientists, entrepreneurs, mining engineers and other stake holders. Next to granite, it is not marble that has played a crucial role in the cumulative market turn over but sandstones, quartzite and slates. Apart from scientific quarrying techniques, the requirement of the day is adequate funding mechanism on long term for integrating the various segments – production, processing and exporting. It is rather unfortunate that the many of the recommendations of two committees held under my Chairmanship during 1991- 2000 – Extreme Focus Committee for Industries and the other Development Panel Committee for Industries – remained unfulfilled till date excepting introduction of GCDR in 1999. Imagine the plight, turmoil and agony of an entrepreneur, stationed at Bangalore having his quarry operation in Andhra Pradesh, processing plant in Karnataka and marketing through Tamil Nadu, in carrying out his trade activities across three States having their own Rules and interpretations. It is a known fact that Brazil is endowed with dimensional stone deposits of extreme beauty, colour and ornamentation and as on date its two varieties Asil Bahiya and
Asil Bahuba are expensive and famous in the international market. Against this backdrop, India is fighting for its rightful place. In this context, the unbiased, scientific opinions and suggestions of Dr. B.P. Radhakrishna, the legendary geoscientist in his article on dimensional stone deposits, are worth considering, of categorizing the dimensional stone deposits under Major minerals for uniform application of rules and seamless operations of the Industry across whole of India. In case a granite material of particular colour, texture and aesthetic appearance is chosen for a high-budget construction project in one corner of the world, then that type of granite material is sourced from Spain, Africa, South America, China etc because of the investor friendly, uniform policies; in India the entrepreneur has to scour for similar type of material in one corner of India, cross over all the existing hurdles and by the time the material is sent, the market is finished. In case of a Major Mineral, only one type of analysis is required i.e. its chemical analysis to find its grade (for lower grades, the process of beneficiation is available for enhancing the quality of the grade); whereas in a stone, two types of analyses, one chemical and the other its engineering properties (such as density, water absorption, modulus of rupture, thermal co-efficient etc.) are required to find out whether the stone is suitable for cladding in 50th floor withstanding all the vagaries of Nature. The material that is being supplied in the international market should meet the Standards of that country be it of American, European or African. The false perception that granite trade is lucrative, one of high fashion trade exists not only amongst the public but also amongst the knowledgeable. It is not so, only the marketing of the material is fashion oriented with no perpetual market for any type of material. Every variety is demand oriented. Added to this acute market competitiveness, the recovery percentage of a stone is hardly between 3 and 10%, the balance of the resources being treated as waste, with the result the market demand is not met in full and in time. Thus the problems faced by the stone industry are manifold – non-granting of lease in time, dearth for quality raw blocks, lack of power, undue delay in statutory clearances, unsubstantiated or stray issues such as child labour deployment, encroachment, illegal operations, stiff global competitiveness, anti dumping duty in export sector etc. The pride of AIGSA was once such that the body could organize independently the STONA Trade Fair in 1987 without going through the routine channel of Trade Promotion Council (now Trade Fair Authority of India). Hence the fair and earnest request of FIGSI today is unstinted all round support from the State and Central Governments, Statutory Authorities and the Public so as to achieve once again the rightful pinnacle of success in the global market.
Biosphere takes its nourishment and requirements entirely from earth, either organically or inorganically. Whatever material that is scoured from the surface of the earth has come from beneath the ground. In that sense mining is the oldest industry. When the living organism withers, it gets disseminated and assimilated within the earth. As such there is no environmental issue involved herein. However when the world is over-populated and every available asset is harnessed for comfortable living and enhancing the value of life, then the common perception arises whether the present day mining / quarrying is being carried out at the cost of future generation with utter disregard for sustainable environment. This has been the paradigm of the natural resources rich developed and underdeveloped countries. If it is so then there should have been a balance between safe guarding of the environment and exploitation of natural resources. In a democratic country wherein the Government is answerable to people, framing of esoteric rules and regulations following the pattern of developed countries has not helped neither the Industry nor the Government. In fact it has caused more damage and harm in reckless exploitation of natural resources at the cost of the environment. A delicate balance is required between two extremes – on one hand the hyperactive NGOs crying foul over every mining / quarrying activity as disaster to environment and on the other, vociferous voice of mining industry over stifling rules and regulations. Both the segments need to be respected and genuineness is there in both their concerns. When the stone industry complains over “n” number of rules and regulations and high royalty over other states, the findings of a Regulatory Body over enormous removal of material in Ilkal and Bagalkot quarries on the reported figure of excavation of 742 cubic meters and levying of penalty between 1 and 2 crores of rupees on 1 acre of land, do indicate unregulated looting of natural resources. Complex set of rules and regulations and cumbersome categorization of granites have made practically difficult in implementing the regulatory mechanism. Had there been simpler rules and regulations and lesser royalty on
blocks for domestic consumption, the incidences of Ilkal and Bagalkot would not have occurred. When there is no applicable standard in enforcement of laws and royalty, then it is meaningless for shifting up of a Minor mineral category to Major. In fact States look up to the Centre for amendments of laws and revision of royalties. The royalty of Major Minerals is enhanced to 15% and the State is poised for such a revision along with the distinct shift of the Centre for auctioning of the resources where royalty is retained along with quoting of premium. So whether the stone is a minor or major, the ultimate requirement of the Industry is fast processing of mine leases with simplified rules as per GCDR. Now environmental clearance is made mandatory by NGCS, even for a land of less than a acre of quarrying operation. The mandate is applicable even for current users on which the State Government may have a different say. As long as the mandate has not been contested and a result obtained, the rule is to be obeyed. Though GCDR is there for every state, yet there is no governing law and every state is free to adopt its own governing laws. This does not mean that any one state would go outright to kill its industry by adopting impractical laws and high royalty. Hence the Industry should come out with a proposal in consultation with reputed scientific bodies such as The Geological Society of India, on the norms for uniform application of laws, the practical way of levying royalty (as in Major Minerals linked to ad valerem), break up of realistic cost of production, impediments in selling of products etc, so that the State Government is in a position to liberalize the trade practice as much as possible. As far as the environmental issue is concerned, the State Government has no say which will have to be taken up to the Centre. The requirements of the Industry are made to be known in clear terms with concrete proposals so that the State Government, which is better placed rather than the Centre, legislates laws in best possible manner.
As per Hindu Mythology, our body is made up of five elements, of which earth is an important element. Earth has stone as an important component and in this way stone is connected with our body. Stones in the form of idols are being worshipped for our energy, support and sustainability. Practically no kitchen in Bangalore is devoid of stones. Thus stones have become intricate part of man’s civilization, right from stone-age when stones were used in earthen pots and as sharp defense implements. It is no wonder that stone industry is one of the oldest industries in the evolutionary history of man. Amongst stones, when a small country such as Italy could popularize its marble world wide, India in spite of having 20% of global resources of stones, could not promote a single variety of its own in world market. As extremely good quality stones exist in India, there lies tremendous scope and opportunity for the industry for its expansion and ramification as well as to those associated with the industry especially the banking sector. It is heartening to note that Governments have taken up several issues connected with the stone industry for speedy remedial measures and implementation. In this context, the present theme based National Seminar has its greater importance and significance. Coming on to the financing part of the Industry, Syndicate Bank, a nationalized bank since 1969 has 3500 branches with business transaction around 4 lakh crores. A recent launch of the bank, probably first of its kind amongst banking sector, is Syndmarble, an innovative financing scheme for the stone sector right from the start of land acquisition, quarrying operation, procurement of machineries, trading, thus covering the entire gamut of the stone industry. Though the scheme has been launched about a year back, yet vigorous campaigning of the scheme during the period 17 – 22 November, 2014 has resulted in enrolling of more entrepreneur under this scheme. Officers of the Syndicate Bank are at the service of the industrialists of Stone Sector in enlightening the significant aspects of the scheme.
Address by Shri. N.Ramakrishnan,
Deputy Secretary, Ministry of Commerce, Government of India, 
Delhi.

For any industry to make rapid progress, passion is the pre-requisite which however is not lacking in granite industry. Commerce Department at the Centre acts primarily as a facilitator for export of value added products and restrict the impact of imports and in recent times attention of the Department has been drawn to the request of the stone industry for conversion of stone products from Minor to Major Mineral category. The reason for such a request is being analyzed in its perspective in consultation with the Ministry of Mines. It has been rightly pointed out that no State Government would be interested in killing its industry potential and truly there must have been certain limitations on the part of the State Government in addressing the issues of the industry. Normally an industry gets a raw deal from the Government only when there is lack of awareness on issues related to the industry by the people concerned in the Government Departments, lack of knowledge on the products of the industry, on processing mechanism of value addition on the products, technology requirement from the developed sector, on market segment and so on, so forth. When none of these are major issues as far as stone industry is concerned, and then it is unfortunate that the industry has not been understood properly and the State Government may come forward and enlighten the Commerce Department as well as the Ministry of Mines. The multiproduct 2 billion export sector of stone industry is by no means a small segment and the Department of Commerce is keen in understanding the industry especially its export promotional aspects. Environmental issue is altogether different which is likely to be debated in detail by this seminar. It has also been indicated that there would be one more seminar, likely to be held at New Delhi wherein the Commerce Department will definitely have fruitful interaction provided all stake holders, State and Central Governments, Statutory Bodies have been brought under one umbrella. Secretary, Mines, GoK has aptly pointed the lack of self regulation in the participants of the industry. In the absence of self regulation it is meaningless
to blame either the State Government or the Central Government. When the trade is really
global, the success happenings elsewhere are to be emulated, especially on environmental
issues. In addition 30 years of trade in the country should not have 30 different issues to be
addressed by Governmental Agencies. Mitigation focus gets diluted. Let there be
prioritization on issues with immediate focus on one or two issues. State Government is
seized of the priority issues and competent enough to legislate laws for the progress of the
industry.

Address of Shri.M.Madan Gopal,
Addl.Chief Secretary, Dept of Forest, Ecology and Environment, GoK

It is heartening to note that a National Seminar on Dimensional Stones has touched upon
themes such as environmental issues and community welfare measures, the fields which have
hitherto been neglected and invited experts from fields concerned for deliberation in the
seminar. As strings in a musical instrument are to be of just temper, neither too tight nor too
flexible for any sweet output of a musical note, laws for any industry, even for a society are
to be of right mixture, neither too harsh nor too lenient. When the granite industry was in the
nascent stage in 1986, there were practically no governing principles on quarrying and
quarrying was rampant in almost all forms of landscapes – agricultural land, forest, temple,
water bodies, townships etc – with utter disregard for any government laws. Court
proceedings were to be enforced and it is well known that any litigation is a prolonged affair
benefitting neither the industry nor the Government. Other major issue that came to the
attention of the Government of Karnataka was gross mis-matching of data on the quantum of
raw blocks exported from Ports of Chennai and Goa with those of data on the quantum of
blocks quarried during that period in Karnataka. Royalty paid to the State Government was
distinctly less to the tune of 60 -70%. The misdeeds would not have happened, had there been
simplified rules with transparency, accountability and time frame in the system. Any
monitoring committee (such as Rule 11 of KMMCR) is an impediment for speedy
implementation of governing process. In fact delegation of powers with prescribed ceiling on
allocation of an area to Deputy Commissioners at district level for issuing of quarry lease, renewals etc would not only simplify the whole processing mechanism but bring about transparency and expediency. The plight of granite processors is even worse with uncertainty in getting quarry leases, raw material for the processing units, below par (break-even level) performance of the unit, mounting debts etc. Production of raw blocks is not overnight; source of raw material is known.; production figures are known; only monitoring mechanism of the State is to be made effective, instead of punishing the processing units by stopping their production. As in case of Major minerals, there should have been definite time frame for issuing of lease, renewal, way permits etc. from the date of filing the applications. Accountability is fixed on officers concerned in case of delay beyond the stipulated time period. Another major issue to be addressed by the industry is the adverse environmental impact that a quarrying imparts in its vicinity- noise, dust pollution, enormous generation of solid waste, ground water pollution and depletion, vanishing of greenery and desertification of the area. Quarries that lie scattered in Gulbarga and Bijapur districts stand testimony to these unfortunate developments. It is not that the environmental impact cannot be mitigated. Scientific quarrying operation, strictly adhering to the stipulations at the time of entry and exit of quarrying operations, pollution control measures, land refill and reclamation measures etc would not only facilitate statutory clearances but also speedy implementation of further leasing processes. Hitherto the welfare of the workers in a granite quarry has been neglected by the industry and in view if increasing enforcements from the Departments of Environment, Forest, Labour Welfare and Mines Safety, things have become mandatory for the industry and any scientific approach with the available recent technological innovations, implementation of the statutory provisions by the industry is not that difficult. It is judicious if a portion of the profit is earmarked for the purpose. Periodic convening of monitoring Committees such as SEA, SECC is to be made use of by the industry in addressing their doubts, clarifications etc in one go instead of, of piecemeal approach at the expense of time, energy and finance. Any unscientific, over exploitation of the non-renewable natural asset, formed during millions of years, will have devastating environmental impact, as what has been witnessed in some of the African and Middle East countries. Once the Department of Mines and Geology of Karnataka was boasting, thanks to the pioneering efforts and dedication of Dr.B.P.Radhakrishna, of having finest collection of natural stones and minerals in its Museum since 1860s or 1870s and unfortunately the world-class collection of specimens has been lost over the period and the industry with its resources at its disposal should rebuild the Museum taking help from scientific bodies. The National Seminar, thus should form a common platform wherein all the relevant issues that are being faced by the industry are to be deliberated so as to establish a harmonious path of resolving the issues.
Vote of Thanks – Shri.K.Keshava Murthy, Chairman – Seminars & Conferences Sub-Committee, FIGSI

After having thanked all the Dignitaries of Inaugural session and also the key note speakers, who were to deliberate in detail the various issues of the industry in the Technical Session, special thanks were attributed to Ms.Neha Vyas, Senior Environmental Specialist-World Bank and Shri.Anil Taneja, Litos, Spain for their gracious presence and participation. Grateful thanks were extended to The Department of Mines and Geology, CAPEXIL, Gem Granites, the Co-sponsors, M/s.Mysore Minerals Ltd, advertisers in the souvenir – Tata Hitachi, Atlas Capco, Syndicate Bank, Maritime India Pvt Ltd, Kobelco and to the Media for their unstinted support.

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Any natural resource can be won over for societal purpose only from its place of origin / occurrence and not else where. The natural land use pattern of a deposit area has been quite different till it is acquired for quarrying or mining purpose. The impact on environment or ecosystem immediately on commencement of quarrying operation is quite severe, almost irreversible. In the absence of effective environment management system and subsequent equity participation in the development of the area by the granite industry concerned, the entire trade is considered as illegal and viewed suspiciously. Unfortunately this is not true and every effort has to be put in place by the industry to dispel the misconception. Every environment management system makes the activity sustainable and conserves the area for posterity.

The first and foremost impact is the complete alteration of the land use pattern – agricultural land to non-agricultural dump yard or quarry faces, forest or green cover to barren excavations, mounds and hillocks reduced to deep pits and large heaps of overburden, water bodies getting dried up, villages or settlements, uprooted, temples and worshipping places, getting shifted and so on, so forth. The total impact is designated as land degradation. Land degradation in turn severely affects the overall gamut of the ecosystem – pollution of air &
surface water, uprooting of fauna and flora, contamination of ground water, health risks to local population etc.

Excavation generates tonnes and tonnes of solid waste, disposal of which or finding alternative utility for such dumps is extremely difficult. Generation of solid waste leads to concentration of particulate pollution in the air, making the atmosphere heavy and dense causing respiratory problems to quarry workers and locals. Surface water gets clogged with accumulation of silt and sand and becomes unusable. Living organisms on land and in water are equally affected with these developments. Impact is not restricted to the confines of quarrying operation but affects the surrounding or adjoining areas through infiltration of contamination in ground water, surface run off, circulation through breeze or wind, migration of affected organisms etc. Blasting at the time of over burden removal is another hazard which has created ground vibrations, instability of the ground and acoustic vibrations. Machines, deployed in quarrying operations such as compressors, drilling units, cranes, generators etc, apart from their emission of toxic fumes, add significant noise pollution to the atmosphere leading to hearing problems and ear infections. Deviation in operation from quarry plan, absence of safety equipments, lack of hygiene in workers welfare center, absence of health care etc have created havoc in many quarrying operations not only from environmental point of view but also in overall deterioration.

Problems associated with quarrying operation are not surmountable. Practical planning and scientific methods, which are there in developed countries, require to be adopted strictly at any cost. Quarrying as per approved plan, formation of benches as stipulated by mine safety, contour mining at deeper levels, quarry roads as per designated slope gradients, stabilization of quarry dumps with benches or with geotextiled green cover, alternate use of dump materials in the construction of check dams for impounding water and preventing run off, utilization of sand and silt for filtration in impounded water bodies for purification, periodic maintenance of machines or timely replacement of old machines with advanced machines fitted with mufflers to reduce noise pollution considerably, sprinkling of water to reduce air or particulate pollution, avoiding blasting with recent introduction of line drilling machines, providing of safety equipments to workers, creation of welfare and medical centers and finally continuous community welfare measures.

Environment Management System, as outlined above is a continuous process to be taken up simultaneously along with quarrying operation and restoration of ecosystem partially, as simulation of original ecosystem is practically not possible, should invariably form part of quarry-exit plan. Back-filling of excavated pits, providing barricades around quarry areas and impounded water bodies, filter beds for natural purification of water, reclamation of the area with afforestation measures, proper storing of under size and unapproved blocks for future use etc are some of the measures to be taken care of by the entrepreneurs. Once the EMS is in place and has become routine, then automatic renewal or allocation of fresh lease etc will become part of routine exercises.

Any quarry operation in forest or non-forest area requires approval from the Forest Department under Forest Conservation Act, 1980. However, monitoring of EMS is vested with the DMG of the State, both for Major and Minor Minerals. From 15.8.2014 online system of applying for EC to a Nodal Officer (Forest Conservation) has been introduced wherein tracking of the application, status of application, likely time for the EC etc are feasible thus completely doing away with the normal hassles. Other details to be furnished at the time of applying for EC are
(i) Toposheet, boundary pillars with GPS co-ordinates indicating the extent of the quarry area, justification for taking up quarrying in a forest area, status of EC;
(ii) Status of Wildlife, Settlement of Forest Rights Act (2006);
(iii) Payment of NPV and CA;
(iv) Proposal for regeneration and reclamation (R&R Plan) of the area.

Finally when an area, having given up its natural resource to the industry for development, comfort and luxury, then in turn it requires certain amount of ploughing back of the revenue earned by way of infrastructural and logistical development facilities for the benefit of the domiciles of the area. In spite of enormous amount of iron ore has been mined from Bellary area, since last three decades, yet the area remains neglected devoid of basic developments and amenities. Hence equity participation by the entrepreneur is preferred and desirable, if a scheme is given along with the EMS.

PROSPECTS FOR THE STONE INDUSTRY IN 2015 – RISKS AND POSSIBILITIES
Anil Taneja, Litos, Spain

In order to understand the uniqueness of stone products, one will have to go back to the origin of the planet which has been estimated to be around 4.7 billion years of age. Natural stones in the planet were surmised to have been formed around 3.8 billion years ago. Dinosaurs came in to existence around 200 million years and the man appeared around 200,000 years ago. Thus the antiquity of natural stones is unimaginable and any product of natural stones is unique, having no comparison with any other artificial imitations such as synthetics, ceramics, wood, steel etc. The uniqueness of a natural stone is intrinsic, of Nature's creation, the value of which can neither be measured nor reproduced. The aestheticism has been felt even at the dawn of human civilization and several of the intricate stone carvings and constructions such as palaces and temples. Pyramids, memorials etc stand testimony to the unassailable status of
natural stones. Human population from 1 billion in 1800 has jumped to roughly 7.2 billion as on today and in commensuration with the increase in population, 3.9 billion people have migrated from rural to urban areas and another 2.5 billion is expected in around 30 years time. Tremendous amount of construction activity that has taken place all over the globe is something unimaginable and mind boggling. If any one observes the varieties of natural stones used in constructions all over the globe, he / she will be overwhelmed by the sheer number of exquisite varieties of stones, unparalleled and unmatched and many of the unique varieties have become extinct on account of their restricted resource. In order to renovate some of the heritage sites, special permissions were obtained to open certain of closed quarries for limited supply of extinct varieties of stones. Market promotion of certain finite resources of stones requires highlighting of the factors –

(i) Antiquity of the stone – as old as the formation of initial rock formation;
(ii) Intrinsic uniqueness of design, texture, grains which can neither be copied or simulated;
(iii) Demand for its premium and prestigious use having no relation with the market;
(iv) Price is exponentially fixed to its premium value and demand with no correlation to its cost of production;
(v) Supply in staggered manner, to the requirement.

As consumers are not aware of the intricacies in the source, production, demand and supply of these unique varieties, the onus in safeguarding the material to the requirement lies with the quarry owners, processors and market players. As per the statistics of the World Natural Stone Association, the market consumption of granite slabs is somewhere around 300-350 million sq.mts / year and for all varieties of natural stones it is around 800 million – 1 billion sq.mts / year; whereas the production and market consumption of synthetic, imitations is nearly 10-15 times more to the tune of 12 billion sq.mts / year. One can understand the sheer magnitude of the market size and segment. In India, the stone industry employs around 1.5 million people against China’s 4-5 million people. The anticipated growth in employment potential in India, keeping in mind the exponential growth of market size, as visualized by the World Natural Stone Association, is around 15% more in about 5-6 years. If the projection in employment generation is to be fructified, then the mining laws are to be in proper order with time bound actions.
It is a pleasant welcome augur when DGFT has been invited for the first time as a part of technical delegation of the seminar. Since there has not been much interaction between DGFT and the industry, the problems that are faced or being faced by the industry, especially in export front are not known to DGFT. As new policy of FT of the country is to be announced shortly by March end or April, 2015, it is advantageous if the industry spells out its exact requirements – restrictions on imports, if so types of restrictions needed or imports on free list etc. The broad structural framework of the Export Policy includes –

(i) Export related Infrastructure;
(ii) Development of New Markets;
(iii) Rewards / Incentive Schemes;
(iv) Technological Upgradation & Modernization;
(v) Duty Remission and Exemption Schemes;
(vi) Deemed Exports;
(vii) General Provision to help Exporters;
(viii) Reduction of Transaction Costs.

Export Related Infrastructure – Under this, ASIDE is a scheme, formulated to involve the States in the export effort by providing assistance to the State Governments for creating appropriate infrastructure for the development and growth of exports.

Towns of Export Excellence (TEE) – Under this scheme, towns which are producing goods of certain export value are notified as TEE.
Development of New markets – The scheme Market Access Initiative (MAI) is in the form of financial assistance provided for export promotion activities on focus country, focus product basis and is available to Export Promotion Councils (EPCs), Industry and Trade Associations (ITAs), Agencies of State Government, Indian Commercial Missions (ICMs) abroad and other National Level Institutions / eligible entities. Activities taken up under MAI are:

- Market studies / surveys;
- Setting up of showroom / warehouse;
- Participation in international trade fairs;
- Displays in International departmental stores;
- Publicity campaigns;
- Brand Promotion;
- Reimbursement of registration charges in fulfillment of statutory requirements in the buyer country;
- Testing charges for engineering products abroad;
- Assistance for contesting Anti Dumping Litigations etc;

Each of these export promotion activities can receive financial assistance from government ranging from 25% to 100% of total cost depending upon activity and implementing agency.

Market Development Access (MDA) – under this scheme financial assistance is provided for a range of export promotion activities implemented by EPCs and Trade Promotion Organizations on the basis of approved annual action plans.

- Trade Fairs and Buyer Seller Meets abroad or in India;
- Export Promotion Seminars;
- Financial assistance with travel grants is available to exporters travelling to focus areas;
- Financial assistance for exports having an annual export turnover as prescribed in MDA guidelines (www.commerce.nic.in)

In addition DGFT has its own schemes which are –

- Export Promotion Schemes – various schemes that come under this category are Focus market Scheme (FMS), Focus Product Scheme (FPS), Market Linked Focus Product Scheme (MLFPS), Served From India Scheme (SFIS), Status Holder Scheme (SHS). These schemes provide Duty Credit Scrip equivalent to certain % of FOB value of exports in free foreign exchange. The scrip can be used for import of inputs, goods or custom duty etc.
- Duty Exemption / Remission schemes – enable duty free import of inputs required for export production. DESs include Advance Authorization Scheme, Duty Free Import Authorization (DFIA) and Duty Drawback (DBK).
- Capital Goods Schemes – Export Promotion Capital Goods Scheme (EPCG) permits Technological Upgradation. Zero duty EPCG allows import of capital goods for pre-production, production and post-production subject to an export obligation.
- Others – Restricted License, Deemed Exports etc;

It is unfortunate that the stone industry has not had any fruitful interaction or availing of schemes under any of the above provisions, neither under import of capital goods for quarrying and processing nor for export of value added finished products. DGFT invites
queries on various schemes as well as feedback from the industry on various schemes availed, incentives received etc for better management and timely assistance.

Some of the Government Agencies, with whom the industry should have constant inter-action are –

- DGFT – Under MoC&I, Dept. of Commerce: Makes trade policies, runs export promotion and other schemes, IEC issue, registration etc; (www.dgft.gov.in)
- Customs / Excise – Under MoF, Dept of Revenue, CBEC: Responsible for implementation of policy and duty collection, Drawback, etc; (www.cbec.gov.in)
- Banks – Under RBI regulations: Responsible for payment and monetary transactions (www.rbi.org.in)
- EPCs and ECGC: Under MoC & I: Trade Promotion activities, RCMC, CoO, trade insurance etc;
- EIC: Under MoC & I: Inspection certificates, CoO, sanitary and phytosanitary certificates etc; (www.eicindia.gov.in)

SCIENTIFIC DEVELOPMENT OF MODERN QUARRYING AND ITS BENEFITS TO COMMUNITY WELFARE AND SOCIETY

R.Veeramani,
Chairman-Granite, Natural Stones & Product Panel – CAPEXIL
Founder President FIGSI

National Seminar is apt at this juncture and the organizers deserve due credit and appreciation. Scientific development, both in quarrying and processing encompasses technology advancement; high-end mechanization and value added processed goods. The greatness of the industry is such that nearly 110 varieties of granites, along with other natural
resources – marble, sandstone, slate, quartzite, limestone etc are being exported entirely under Indian Brand Name and every manual abroad, be it of engineering, interior design, artifacts, displays Indian trade name, source and specifications. The industry takes immense pride that in comparison to any other industry or corporate, the “brand equity” of “Indianness” has been exported to global market along with the value added products. Around 65% of products exported from India are value added, state of the art products, unlike South Africa whose export of processed products is hardly 5%. The performance of China is on par with India and in recent times, the entire market segment of Japan has been captured by China, not only by virtue of its proximity to Japan but also due the strong support from the Government with simplified procedures in allocation of areas for quarrying, longevity in allocations for the industry to pump in finance, in establishing infrastructure and logistical supports, financing with minimum of interest on easy terms and in generation and deployment of skilled labour force. Hence China commits and delivers in time in view of least transit and processing time. Other markets such as Europe, North America, South America etc. are quite far away from India and bridging the logistical gap itself is a strenuous effort by the Indian Stone Industry. Even after having crossed the arduous hurdles, are there any compensatory measures from the Government, State or Central, by way of timely long term leases, timely processing of issues, financing on easy terms of payment? It is unfortunate that there is absolutely no support on these issues. Time is essence of life, be it of in personal, business or in day to day transactions or activities. If there is no value for time and things are being done on their own leisurely fashion, then where is the question of credibility or trust worthiness in our transactions / commitments across international borders? To cite an example, in order to impress upon the severity of the situation and value of time, there was a severe cyclonic storm in Orissa destroying all infrastructures – road, power, water, communication etc – and preventing timely export of the granite variety Oyster Pearl to an overseas market. As the supply of the granite variety had been to a major construction activity wherein one floor was being added every week with the cladding of this material, any stoppage of supply would have serious repercussions with severe penalty, loss of face and black listing. Any recourse to clause under Force Majeure would be a protracted arbitration process. Practically with no support from any quarters, my Company had to resort to emergency steps for infrastructures and timely supply of the material. As there is no respect for time here in India, 95 % of stone supply in international market is met by Scandinavian, European, Brazil, Italy, North American markets. In the last 10-15 years revolutionary changes took place in quarrying operations in India. Jet burners were totally abandoned on coming to know about their adverse impacts. Against jack hammer, noisy drilling, diamond wire saws have been introduced for three dimensional sawing. Hydraulic compressors replaced conventional compressors. Recent induction of Tom Rock machines have dust collectors, in built within the working system. Modern day scientific quarrying can now boast of practically nil noise and dust pollution. Dust pollution during splitting and soil removal is minimal which gets reduced by water spraying. Thus the Industry has evolved through trial and error, practically with no prior knowledge. Are there any standard text books on assessment of granite deposits, on quarrying techniques, on specifications on suitability of stones for monuments, slabs, tiles and engineering products such as surface plates? Only recently Central Organizations such as Geological Survey of India, Indian Bureau of Mines and National Institute of Rock Mechanics have come out with certain publications based on the industry’s request. Though there is no unanimity in arriving at the recovery percentage, yet the official gazette notification is between 35-40%. In natural stone quarrying, there are two kinds of wastages one over burden wastage and the other block processing wastage. There are twelve kinds of natural defects and even after dressing up of a block, it can get rejected on account of any one natural defect. Unlike in other mineral sector, there is no mechanism herein in upgrading the blocks to defect free status. No text book tells an entrepreneur on continuity and sustenance of a defect free deposit, beneath the surface, its continuity and its desirable variations. Amidst
enormous financial strain, tremendous anxiety and agony quarry operation is being carried out and if not support, at least the industry is to be respected. The risky industry has seen many ventures gone bankrupt. In Italy, marble quarries started by an army general serving under Napoleon, in 1821 are being continued generations after generations under the same brand name and supplying material throughout Europe. Where is such brand equity and continuity in India? Lease granted for ten years, after having been made an investment running into crores, gets terminated abruptly on unrealistic grounds. Royalty has been increased by 150% without taking in to consideration the export price and market demand. No other country would resort to such drastic measures. Recently when off-take of raw blocks from India was drastically reduced or stopped, the reason was found to be high appreciation of Japanese yen from 90 to 120, by nature of which imports in to Japan became dearer. As erection of monuments became costlier and unaffordable, Japanese have resorted to cremation. Markets, raw block exports from India to China and exports of finished monuments from China to Japan, have collapsed overnight. Nearly 65% of processing industries in China are running below break even or at the verge of collapse. Thus the stone industry faces innumerable challenges globally, heavy import duty, anti dumping restrictions, stringent specifications etc. If at all the industry has established its name and fame in overseas markets, then the credit goes largely to the tireless and painful efforts of the entrepreneurs in the industry. The spectacular success of first STONA held at Bangalore, instead of being appreciated by the governments, administrators or statutory bodies, gave rise to several misconceptions that the industry is rich, highly lucrative and pompous. Somehow the wrong notion has taken deep roots, the negative ramifications of which the industry feels today. As in any other industry, there are certain wrong doers in this industry indulging in corrupt practices. Let them be punished with appropriate legal actions; but the entire industry should not be branded as corrupt. Of late for want of environmental clearance certificates, several applications have been kept pending. As has been indicated earlier, there is no noise pollution as the machineries are all modern fitted with mufflers, filtering out the noise decibals. Similarly dust is collected by sacks attached with the machines. At the time of splitting, sprinkling of water is resorted to for prevention of dust. Quarry areas are normally barren, devoid of water. Water is being procured at many places. Hence there is no water pollution. It is agreed that there is certain amount of land degradation which will be attended to at the time of exit by submitting proposals on reclamations and rehabilitation. More than the Major Mineral Mines high end machines such as dumpers, excavators. Line drills etc are being procured by granite quarry operators and suppliers like Tata, Telco, Hitachi, Escorts, L&T etc can vouch for the same. The industry welcomes a panel, comprising members from Governments, administrators, policy makers, statutory agencies etc for a visit to quarries in Scandinavian, Italy and North American countries to have a first had insight in to modern quarrying operations, mitigate measures taken up for environmental pollutions, measures to be adopted in forest areas and implementation of post quarrying exit proposals. Similarly media are requested to send their reporters for a day’s visit to quarries in India. Let them realize hands on experience about quarry life day in and day out. With all these heart burning issues and hurdles, the industry has grown from 60 crores to 2 billion in export sector. The brighter side of the industry, which is an embodiment of qualities such as – sincerity, patience, hard work, knowledge, creativity, innovations, sacrifice – needs to looked at, appreciated, supported and strengthened. The relationship between the Governments and the Industry is like between the Lessor and Lessee, between husband and wife with mutual trust, confidence and friendship. Trust the Industry and it will fight tooth and nail in international market to once again attain the pinnacle with branded Indian stones.
SYNDMARBLE – SCHEME FOR FINANCING MARBLE, GRANITE AND STONE CRUSHING UNITS INCLUDING TRADERS
MSME & Retail Credit Department, Corporate Office, Bangalore.

Financing MSME units has been taken up as a thrust area by the Syndicate Bank as the contribution of MSME units to country’s GDP is around 8%. Achievements and contributions of MSME units to the Nation’s economy are remarkable – contributing 40% to country’s exports and occupying 45% in Manufactured sector and 32% in Service Sectors. As “Make in India” is the current motto of the Government of India, establishing and financing MSME units have become priority issues by the banking sector overall, so that the skewed expansion of urban areas and migration to urban areas are arrested.

Definition of MSME (as per MSME Act 2006)

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<td>Micro</td>
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<td>Manufacturing units with</td>
<td>Up to Rs.25 lakhs</td>
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<td>investment in plant &amp; machinery</td>
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<td>Service Enterprises with</td>
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Syndmarble, launched by the Syndicate Bank is a unique loan product scheme under MSME both for manufacturing and Service Sectors. Specially designed for marble, granite and stone crushing units including traders, benefits of the scheme can be availed both by the existing units as well as by units proposed.
Salient features of the scheme are as follows:-

- **Purpose** – To acquire new equipments / machinery / vehicles to start and for expansion of activity; to meet the working capital requirement for existing and new units.
- **Maximum Loan Amount** – Rs.500 lac.
- **Margin** – 15% to 20% depending upon loan amount.
- **Interest rate** – Up to Rs.100 lac – BR+1.00% i.e. 11.25%
  - Above Rs.100 lac – BR+1.75% i.e. 12.00%
  - For women beneficiaries 0.25% interest concession.
- **Security** – for all credit facilities under MSE up to Rs.10 lac: As per RBI guidelines, no collateral security insisted.
  
  Loans covered under CGTMSE: Only Primary Security / Mortgage of Land and Building associated with the business shall be insisted; No Collateral Security.
  
  Loans not covered under CGTMSE: Mortgage of property / collateral securities valued at least 50% of the loan amount.
- **Guarantee**: No third party guarantee / collateral security for loans covered under CGMSE; Otherwise suitable third party guarantee / collateral security obtained.
- **Repayment** – Maximum Repayment period of 7 years including repayment holiday / moratorium period.
- **Processing Charges**: 50% of applicable Processing / Documentation and Mortgage charges.

It is not known why, in spite of enormous growth potential in the industry, entrepreneurs have not come forward for finance from banks. Now when Mining Laws and Regulations are being streamlined, then the bank can expect, in the near future, tremendous scope for the scheme.
ENVIRONMENTAL ISSUES IN STONE QUARRYING AND EXTRACTION
Neha Vyas
Senior Environment Specialist, The World Bank

Curiosity that arises in one’s mind is what an international body such as The World Bank has anything to do in a National Seminar on Dimension Stone Quarrying. It is true that the World Bank has no direct interaction with any of the national industries or issues and there is no mechanism of addressing those issues in the world body. The World Bank functions in tandem with worlds’ Governments, Government Departments of all fields, Banking & Financial Institutions, Corporates, Hospitality, Health, Insurance, Construction, Environment, Infrastructure, Logistics, Skill Development, world projects’ formulation, implementation and monitoring and so on. Financing by the World Bank is through Governments, Heads of Organizations, International Service Bodies etc. The World Bank funded Projects, in turn subcontracts the various facets of the Project with concomitant developments in rural upliftment, employment generation and infrastructures. The ramifications of The World bank are well established and entrenched and it is for the local Governments to formulate Projects and avail the services of the World Bank. In view of construction boom and many of the construction projects being funded by the World Bank, there exists enormous scope of expansion in dimension stone quarrying, processing and export marketing. At the same time the core issues of safe guarding the environment and mitigating the environmental pollution and hazards, should not be lost sight of.

The broad outline of the World Bank activities is as follows:

- Infrastructure Projects (including due diligence monitoring of material sources, OHS issues)
- Operations that involve Building Construction / Refurbishment
In each of the above activity, the World Bank plays a vital role on a global scale, effectively interacting with the respective agencies. However while carrying out each of the activity the impact on environment has been the main focus and earnest measures are being taken right at the beginning of the Project rather than at the time of exiting the Project. Under Analytical work and Policy / Background Notes, the World Bank is the apt body to impress upon the right international practice suitable for Indian context. The World Bank is serious about OHS issues (Occupational Hazards and Safety Risks) and sub-contracted Agencies are to adapt Standard Operating Procedures invariably at any cost. Impact on environment on dimension stone quarrying is well known and regulatory norms are well placed in developed countries and any deviation or non-implementation of a standard practice is viewed seriously with heavy penalty. When regulatory norms are being followed diligently, practically with no adverse effect on market demand and supply, why is it then the environmental issues have become the foci in not allocating the quarrying permits in India? Stifling laws, regulations, confusing periodical introduction of amendments, inapt handling of issues by people at the helm of affairs, weak compliance by the industry on major laws etc are the major causes warranting immediate attention from quarters concerned. The benefits that accrue on good Environmental Management (EM) are:

(i) Increased business competitiveness;
(ii) Ensuring regulatory compliance;
(iii) Reduced corporate liabilities;
(iv) Enhanced public and community relations.

Possible solutions for effective EM system are:-

- Simplify Procedures / Rules (bring them all together for one go)
- Bring-in Transparency and Accountability in regulatory regime;
- Improve Governance and Strengthen Enforcement
  - One stop shop and guidance on regulations
  - Standardize EM protocols / reporting
- Demonstrate EM on the Ground
- Use of e-techniques
- Support / create incentives for cleaner production / processing
- Offsetting export related footprint – Value Addition
- Create your own model of development
- Communicate Better.

The attention and serious thought of the Stone Industry are invited on the unique concept of the World Bank i.e. the Extractive Industries Transparency Initiative (EITI). The frame work of the EITI of the World Bank is as follows:-

- The EITI is a global Standard to promote openness and accountable management of natural resources;
- Seeks to strengthen government and company systems, inform public debate and enhance trust;
In each implementing country, it is supported by a coalition of governments, companies and civil society working together;

Primary objectives of EITI are:-

- Enhancing sustainability
- Transparency in revenue management
- Inclusive job creation
- Growth opportunities and
- Addressing resource-related conflicts.

Issues addressed under EITI are:=

- Investments / Operations
- Technical Assistance Lending
- Advisory Services
- Partnership Programs
- Knowledge Products.

Specific Problems are attended to on the following lines:

- Problem Identification
- Identification of Existing Technological Solutions
- Best Practice Technology (BPT)
- Research Proposals for New Technology Development
- Dissemination of BPT to the Industry

What are the benefits of the global phenomena EITI of the World Bank?

Benefits for implementing countries:
Improved investment climate by providing a clear signal to investors and international financial institutions that the government is committed to greater transparency; strengthens accountability and good governance.

Benefits to companies and investors:
Mitigating political and reputational risks; since investments are capital intensive and dependent on long-term stability to generate returns; transparency of payments made to a government can help to demonstrate the contribution that the investment makes to a country.

Benefits to civil society:
Increasing the amount of information in the public domain about those revenues that governments manage on behalf of citizens – thereby making system more accountable.

In the venture of the World Bank promoting construction of Greener Buildings all over globe, dimension stones rate very well in terms of the criteria for ‘sustainability” of building products in terms of

(i) Durability
(ii) Limited Environmental footprint – there are no direct greenhouse gas emissions during processing
(iii) Dust created can be controlled
(iv) Water used can almost be completely recycled.

Let the stone industry consult the Source and the Standard of EITI of the World Bank from its web site, tap the immense potentiality of the scheme and become a formidable force to reckon with in the global market scenario.

At the same time let the industry watch its environmental footprint.

**LEASING PROCEDURES FOR ORNAMENTAL GRANITE / DIMENSIONAL STONE – A WAY FORWARD**

Dr. T.N. Venugopal

Categorization of dimension stones as a Minor Mineral needs relook and perspective approach. The usage of granite, from its fencing and boundary stones, road metal and ballast has come a long way revolutionizing the construction industry with its exquisite slabs, tiles and facades. With the introduction of the state of art quarrying machines and processing equipments, the stone industry has become a formidable sector in the international trade. Unfortunately the industry has not obtained its due recognition in the domestic front, the material being still treated as a minor mineral on par with road metal and sand. The classification of dimension stones as a Minor Mineral u/s 18 of MMDR Act of 1957, enacted by the GoI continues to remain so till date with the States of India duly following the classification in their Act of 1957 u/s 15. As the inherent differences of the States had been reflected in the differences of applicable rules, regulations and laws, Government of India in order to bring about uniformity has brought in The Granite Conservation & Development Rules of 1999. The enactment of the Rule has not established any uniformity in the applicable laws of the States.
The salient features of GCDR, 1999 are in brief:-

- No ML shall be granted by the State unless the area is prospected for granite;
- Prospecting License – Maximum 2 years;
- Maximum period of ML – 30 years;
- Minimum period of ML – 20 years;
- Renewal – Not exceeding 20 years;
- Second and subsequent renewals – further period(s) of 20 year each;
- Minimum Area – Not less than 1 ha;
- Maximum Area – Not exceeding 50 ha.
- Provision to grant more than maximum area and less than minimum area.

Prospecting Operations:

- Scheme of prospecting to be submitted to the State;
- Modification of scheme of prospecting to be intimated to the State’
- Prospecting to be in accordance with scheme of prospecting
- Annual report shall be submitted to the State.

Mining Operations:

- Mining Plan a pre-requisite;
- Mining operations in accordance with the Scheme of Mining;
- Prospecting and Mining to be in a manner to ensure systematic development and conservation of Granite Deposit and Protection of Environment;
- Employment of qualified persons;
- Half-yearly and annual returns to be submitted;

Though the GCDR, 1999 states specifically fulfilling of PL as a pre-requisite for ML, yet it has been made mandatory in Karnataka. With the result several unviable deposits were opened and abandoned, which could have been avoided.

A comparative analysis of the salient features of Minor Mineral Concession Rules of different States is given below.

Rajasthan Minor Mineral Concession Rules, 1986

- Provision to grant PL;
- Period of PL one year and renewal for further period of 1 year;
- Maximum area of PL: 50 ha;
- Minimum area of PL: 5 ha;
- Provision to grant up to 100 ha if investment is Rs.5 Crores in Mining Machinery ‘ Mineral Based Industry;
- PL holder has preferential right to obtain ML over the area.

Mining Lease in Government Lands

- Area has to be delineated into plots and numbered;
- Notification inviting application should be published in two daily newspapers (One State Level & one Local);
- 50% of Plots for allotment through Auction / Tender;
- 50% of plots for allotment through Lottery for different categories as per & fixed for each category;
- A maximum of 15% is allotted to persons who have installed Marble Gangsaw or automatic tiling plant in the State;
- Another 5% to those who undertake to invest a minimum of Rs.10 Cr for Mechanization of Mines / or installation of EOU / Processing Plant(s) in the State; to export at least 50% of total production;
- Maximum Period of ML: 30 years;
- Minimum Period: 20 years;
- Renewal shall not exceed 30 yrs and subsequent renewal each for 30 yrs;
- Total period of Lease shall not exceed 90 years;
- Size of Plot: Max. 4 ha; Min.0.5 ha;
- For Khathedari land, ML to Khathedar himself to an area equivalent to his land holding but not less than 0.5 ha;
- No person shall acquire area more than 8 ha;
- Area acquired through Tender / Auction not included in this limit;
- Provisions for acquiring more area:
  (i) Installed two diamond gangsaws or automatic tiling plant – Additional 4 ha;
  (ii) For each additional gangsaw or tiling plant – 4 ha subject maximum of 20 ha;
  (iii) Investment exceeding Rs.20 Cr – 50 ha;
  (iv) Size of plot for granite is 3 ha and Maximum area is 9 ha;
  (v) Area acquired through Auction / Tender shall not be included;

Karnataka Minor Mineral Concession Rules, 1994

- Significant amendments during September, December 2013 and March 2014;
- Committee headed by Addl. Chief Secretary & comprising of Principal Secretary C&I, Principal Secretary, Ecology & Environment Department, Secretary C&I Department, Director, DMG as Member Secretary shall recommend to the State for Grant or Renewal of a QL.
- Priorities:
  (i) A Corporation or undertaking, owned or controlled by State or Central and JV project with such undertakings;
  (ii) Persons established 100% EOU in the State;
  (iii) Persons established SSI unit in the State;
  (iv) Persons holding license for establishment of cutting and polishing unit;
  (v) All others;
  (vi) Individual or society of SC and ST applied over the same area gets preference to the extent of 50% TO sc, 3% TO st;
  (vii) Roster of 30 grants: 1,7, 14, 21& 27 for SC, 2 for ST and remaining for others.
- Max. area –
  (i) 50 acres in case of 100% EOU;
  (ii) 40 acres in case of other cutting & polishing units
  (iii) 10 acres for others
- Min. area – 2.20 acres
- Max. Period – 30 years;
- Renewals for 2 periods of 20 years each;
- Patta lands – (i) working permission of pattadar himself (ii) Owners of granted land / GPA holders shall apply for lease.

Tamil Nadu Minor Mineral Concession Rules, 1959
Grant regulated by TNMMCR, 1959 & GCDR, 1999;
No lease in Government land unless has existing or proposed industry in the State;
State can grant QL in Poramboke and Patta land;
Max. Period – 30 years;
Min. Period – 20 years;
Renewal for further period of 20 years;
Max. Area – 50 ha;
Min. Area – 1 ha;
Provision to grant more than 50 ha and less than 1 ha;
Procedure for grant of ML in Government Land:
(i) DC shall publish in the District Gazette and 2 daily newspapers (one Tamil & one English) inviting Sealed Tenders;
(ii) Before opening tenders Auction shall be conducted;
(iii) Highest Tenderer / Bidder will be granted lease.
Provision for grant of ML in Ryotwari Land
(i) Land owner or Lessee in actual possession or Tenant or Contractor having permission of owner or Tenant can apply for followed by QL;
(ii) Period of PL is 2 years and renewed for further period of 2 years.

In recent times, the growth of Stone Industry is phenomenal, in spite of not so conducive leasing policy by the States. Innumerable quarries have been opened up all over South India with huge capital investment. Quarrying and Processing have become highly mechanized, automated with state of art of equipments. Employment generation in the industry has peaked to around 2 million. Export revenue has become manifold to around 2 billion last year. In spite of oil crisis and plummeting of its market, global construction scenario is promising assuring the market a long term demand for stone products.

If granite and its allied stones are treated as a Minor Mineral category, then the disadvantages are quite apparent:

- Rules vary from State to State depending upon administrative change;
- Some policy initiatives are retrograde and stunted the growth of industry;
- Decision making is increasing centralized;
- Grants are becoming far and few;
- Royalty rights are constantly increasing mainly based of financial pressure of the State;
- Frequent changes in policy and lack of predictability in getting concession, thereby discouraging long term investments;
- Slow down in investment in EOU.

If classified as a Major Mineral, then the Industry will have advantages such as:

- Dispensation of committees for grant of of QLs and applicability of uniform laws;
- Provision for prospecting irrespective of nature of land;
- Availability of large areas for systematic and scientific mining;
- Grants for longer period;
- Ad-valorem based rates of royalty and uniformity in dead rent;
- Rates are fixed by the Central Government in consultation with the industry;
- Resources in forest areas available for grant after due clearances;
- Long term investment and planning possible;
- Level playing ground not only in domestic but also in international markets.
Corporate Social Responsibility is one field that has been neglected by the Industry as a whole, though stray instances of meeting out this responsibility by individual entrepreneurs do exist and make significant impact. CSR is defined by Lord Holme & Richard Watts as –

“Corporate Social Responsibility is the continuing commitment by business to behave ethically and contributed to economic development, while improving the quality of life of the work force and their families as well as the local community and society at large”.

As per the Government norms all the companies irrespective of their nature of operation are having certain social and economic responsibility. Two important issues are –

(i) Responsibilities towards the Government;
(ii) Responsibilities towards the Community.

Responsibilities towards Government include –

- Setting up units as per guidelines of government;
- Conforming to pollution control norms set up by the government;
- Safe guarding the ecology, wildlife and forest in the interest of the country;
- Payment of royalties, duties and taxes regularly as well as honestly;
- Not to indulge in monopolistic and restrictive trade practices;
- Not to indulge in corruption through bribing and other unlawful activities.
Responsibilities towards Society –

- To help the weaker and backward sections of the society;
- To preserve and promote social and cultural values;
- To generate employment;
- To protect the environment;
- To conserve natural resources and wild life;
- To promote sports and culture;
- To provide assistance in the field of developmental research on education, medical, science, technology etc;
- Proper working conditions and welfare amenities to the workers.

Even before the concept of CSR has sunk in, in the minds of entrepreneurs of the Industry, Gem Granites, way back in late 1980s, have started CSR measures by way of building schools, health centers, community utility centers, installing water purification systems, afforestation in relinquished quarry sites, sports and cultural activities, instituting awards and medals in the fields of Geology and Environmental management.

The Stone Industry, as a whole, has now realized and recognized the value and significance of CSR and the activities that can be collectively taken up by the industry are –

- Adopting villages for providing the infrastructures like sanitation, providing pure drinking water, roads, schools, construction of toilets, street lights, parks, children play area etc.. The activities can be projected under Swatch Bharat Abiyana, announced by the Hon'ble Prime Minister of India,
- Conduct periodical health camps in the remote areas and provide medical facilities to the needy people in the area, in association with Lions Club, Rotary Club and other NGOs.
- Plant more and more trees in the quarry / village area. Help and assistance of Forest Department can be obtained for planting purpose.
- The quarry owners should ensure that no ladies and children below 18 years are employed in their operation.

The social services done by the stone industry is going unnoticed since the same has been done on individual basis. It is high time that the industry showcased the good work done by some of our members in the print and visual media to encourage everyone to take up the same in the interest of the development of the society as a whole.

“We must provide funds the rain forest countries need to re-orientate their economies so that the trees are worth more alive than dead”. Prince Charles.
An acute awareness on the necessity of knowledge on geology of granite deposits while selecting for quarrying purpose has infiltrated amongst entrepreneurs in the industry, in the last two decades. The wrong notion that assessment of the geology of the deposit is a one time exercise and is not required once quarrying has been commenced is to be dispensed with immediately. Geological assessment is a pre-requisite at every stage and before every operation in pre-quarrying, quarrying and post quarrying phases. Quality parameters on the geology of the deposit are not only to be established but also to be monitored and managed. Quality Control (QC) and Quality Management (QM) have become essential in recent times as more and more adverse environmental issues are cropping up in deposits quarrying, to the extent of stopping the quarrying operations without addressing the issues pragmatically and scientifically.

Geological knowledge of a deposit should start with an understanding of the earth, its internal structure, its layers from its core to the periphery and the various spheres that envelope the earth. Natural stones are products of Mother Earth and the present day volcanic activity is a standing testimony for the formation of rock types from earth. Rocks are of three types – primary, secondary and tertiary. Those that form directly from magma (molten material of the earth) are primary rocks and they may form either below the surface of the earth (intrusive rocks) or at / on the surface of the earth (extrusive rocks). The intrusive rocks get exhumed upon weathering of the top cover rock or soil. The primary rocks get disintegrated due to weathering and deposited in basins (depressions) to form secondary / sedimentary rocks.
Burial of primary rocks with the overlying sedimentary rocks enhances temperature and pressure to the extent of re-constituting the mineral contents of the rocks and the new rock thus formed is a metamorphic rock. All the three rock types form dimensional stone deposits –

(i) Primary (igneous magmatic) – gabbro, diabase (dolerite), basalt & granite, diorite, rhyolite / pegmatoidal granite;
(ii) Sedimentary rocks – sandstone, limestone, shale
(iii) Metamorphic rocks – granulite, gneiss, quartzite, limestone, marble, schist, phyllite, slate.

The varieties of primary and metamorphic rocks form the commercial granites. Formation of commercial granites in two different environments – peaceful formation and forceful formations creates two types of structural features – inherited structures and acquired structures respectively in the two modes of formation. Formation style and study of structural features in a deposit constitute quality control parameters in a deposit. Pressure, temperature, period of cooling, period of consolidation etc decipher formation and structural styles as well as the colour, grain size, texture and design patterns of the rock types.

Quality Control parameters are either non- / semi – quantifiable and quantifiable.

Non-quantifiable parameters include – colour, grain size, mutual arrangement of grains (texture), look / appearance, aestheticism, cracks, patches, segregations and aggregations.

Quality Control measures on the above non-/ semi- quantifiable parameters encompasses –

✓ Ascertaining existence of uniformity / variation by constant monitoring through visual examination
✓ Sample survey
✓ Statistical survey &
✓ Probability tests.

Quantifiable parameters on a deposit include –

Planar structural features – joints, veins, fractures, faults, folds, shears (engineering geology treat these structural features as discontinuities, which are quantified as ISRM guidelines).

Quantification factors comprise – Orientation of Discontinuity, Spacing, Persistence, Termination Index (T), Roughness, Wall strength, Aperture, Filling, Seepage, Number of Sets, Block Size & Block Size Index (Ib), Volumetric Joint Count (Jv).

Above study is termed as Deposit Characterization – I.

The study of inherent engineering properties of a rock forms the Deposit Characterization – II.

The values of the following engineering properties are arrived at in the laboratory –

- Unit weight (Density) / Specific gravity;
- Porosity / Hydraulic Permeability / Conductivity;
- Point Load Strength;
- Crushing / Compressive Strength;
- Transverse / Flexural Strength;
- Shear Strength;
Arriving at the Rock Quality Designation (RQD) from drill core samples forms the Deposit Characterization III.

RQD is derived as per the equation –

\[
RQD = \frac{\sum \text{Length of core pieces > 10 cm length}}{\text{Total length of core run}} \times 100
\]

By adding up DC I, DC II and DC III (DC I + DC II + DC III) the quality parameter, Rock Structure Rating (RSR) or Rock Mass Classification (RMC) is arrived.

Quality Control Parameters as enumerated are to be measured and documented at every operational stage – opening up of a new quarry face, working on a quarry face, on retreat of a quarry face, stripping up of over burden, dressed blocks examination etc. Constant monitoring mechanism constitutes Quality Management. Thus QC & QM study forms an integral, essential component in deposits evaluation, selection, quarrying and exiting which will undoubtedly help in safe guarding the environment.

Objectives of QC & QM on a granite deposit are –

- Standardization in parameters of rock deposit;
- Optimization in usage of men & material;
- Enhanced recovery percentage;
- Certification of value added products;
- Classification and up-gradation of resource to reserve on UNFC Pattern;
- Market assessment;
- Environment pollution mitigation;
- Conservation of deposit to posterity.

In addition to documentation of QC & QM measures, certain amount of R & D is also recommended for further high end quarrying operation:

- Establishing RSR / RMC through the use of the soft ware 3-D Block Expert;
- Probing of sub-surface deposit with physically non-invasive geophysical surveys such as – very low frequency electromagnetic / radio-frequency electromagnetic, electric resistivity, Ground Penetration Radar, Acoustic Emission, Time-Domain Reflectometry etc.
- Establishing an algorithm in a soft ware to suit Indian conditions.

QC & QM and R & D in granite quarrying are dire essentialities in the present day context as –

- Squandering of good quality deposits earlier and scarcity of good deposits;
- Heavy financial loss in operating bad quality deposits;
- Non-optimization in men and material with high cost of production, incapable of
  penetrating the competitiveness of the market;
- Very poor recovery in production;
- Poor knowledge on end products preventing successful marketing;
- Markets deciphered by overseas buyers.
- Development of acute negative environmental issues;
- Lack of community welfare;
- Day not far off for underground mining.

HIGH END MECHANISATION – DRILLING ENVIRONMENT
AND SAFETY BENEFITS
Anil Martyis, Sandvik Asia Pvt Ltd.

In the last two decades, quarrying machines especially in dimensional stone industry have
become state of art, thanks to pioneering efforts of Shri. Veeramani, Gem Granites and his
contemporaries. Distinct advantages of using high end machines in dimensional stone quarries are:

(i) from labour intensive to minimum of labour requirement;
(ii) environment friendly with elimination of dust and noise;
(iii) energy efficient with minimum of energy consumption and maximum of output;
(iv) safety environment to operators; and
(v) enhanced recovery of blocks with controlled and quality drills;

High end machines take care of the entire gamut of drilling operations in the quarry –
(i) extraction of primary blocks from quarry face;
(ii) secondary extraction of blocks from primary blocks;
(iii) dressing and trimming of transportable blocks;
(iv) slot drilling replacing the jack hammers;
(v) pilot hole drills for the passage of diamond wire saws;
(vi) line drilling for extraction of primary blocks;

For the above operations of drilling the drilling machines that cater to the industry are – DQ 500 (for pilot hole drilling), DQ 440 (for splitting and trimming of blocks), DC 300, DQ 240, DQ 100, DC 120.

Of which DC 120 is the most popular equipment for quarry development and production drilling with 24 – 45mm hole dia. DC 120 has been in the industry since last 15 years with a proven record and over 389 rigs are in operation all over India. The machine is fitted with dust collector which the dust at the source itself. The versatile machine has drilling coverage of 10 sq.m and boom swing +/- 43º. As DC 120 is light with a weight of 2.8 tons, it is being extensively used in border areas by the Indian Army for excavation and construction of bunkers. 4-wheel drive, Ground Clearance of 300 mm and Tramming speed of 3.5 km/h are the additional features. On steeper slopes, Chain tracks and provision of winches on 30º slopes are optional features.

Safety features on board of the machine are exhaustive –

Fire extinguisher, Emergency Stops, Pressure Gauges, Indicators, Tramming and Working Lights (even for night operations), Tramming Brake, Inclination Gauges, Warning Labels, Automatic Stop Functions, Over Centre Valve, Winch, Drill rod Retainer, Anti-Jamming Automatics (which prevents jamming of drill rods during operation) Monitors (as per European Standards EN 791) for Noise Level & Noise Emissions and Vibrations etc.

Its high end version is DQ 240 R, a line drilling rig, ideally suited for dimensional stone quarrying. Automation is at its peak in this version – automatic drilling of drilling line, XY inclination display, storing of drilled meters, settings for hole depth, spacing and grinding intervals. Its horizontal, vertical and depth reach makes line drilling an easy task in different terrains.
PANEL DISCUSSION

A Panel consisting of Members,

S/Shri. R. Sekar, President, FIGSI,
Siva Kumar, Ex.President, Chamber of Commerce,
Anil Taneja, Litos, Spain,
R.H.Sawkar, Secretary, GSI,
T.N.Venu Gopal, Joint Director (Retd), DMG, &
Ms.Neha Vyas, Senior Environmental Specialist, World Bank

under the Chairmanship of Shri.D.V. Pichamuthu, Institute of Engineers

deliberated and clarified in a pragmatic and perspective manner various issues raised by the audience. Salient observations made by the Panel and forwarded to FIGSI for carrying them forward with respective authorities in Governments, are

- present land classification is archaic, carried over from British Raj and needs thorough relook and modification to avail fast statutory clearances;
- in the event of allocation of forest land for mining activity then there should be a replacement of “Off-set” system, thereby allocating equal extent of land in some other afforested locality or alternate site;
- there is a necessity of a separate classification for mineral bearing areas as “mineral belt” or “mineral zone” which is exclusively ear-marked for mining activity: State of Andhra Pradesh has taken a lead in this aspect by declaring Ongole Chimakurthi Black Galaxy area as a mineral zone;
FIGSI to initiate action in appointing a third part independent agency to assess and arrive at in each State the ratio of indirect employment generation for one direct employment in the stone industry; in Spain the ratio is for every direct employment of a person in a stone industry, there is a generation of 16 employees in the associated and allied activities; this fact is to be projected to the Government;

When auctioning of a natural resource is not practiced in any part of the world, except in Kazhakastan (?), how far it is practical in India is to be seen in the light of the recent Ordinance issued by The President of India.

Dossiers on Dimension Stones in different parts of the country prepared by the Geological Survey of India are to be procured by FIGSI and a Library is to be built up;

Instead of individual CSR activity, the Industry as a whole has to take up a major Project with the assistance of the World Bank;

R & D and Training Center for skill development are essential;

In the destruction of forest cover Mining Sector forms hardly 1%; however the public opinion is contrary to this in view of passivity of Mining Sector in not properly projecting and propagating the true perspective; immediate steps are to be taken.

Dissemination of information, data sharing and exchange of ideas are truly possible through such Seminars and Workshops. The Industry is to arrange for such common platforms in near future at various locations.

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