

The Rajasthan Stone Industry & International Research

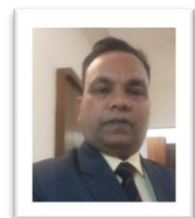
(With Special Reference to Dholpur Stone Industry)



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Abstract

The stone industry finds sufficient room in the international research which witnesses its constant progress and development worldwide. The international research papers have glimpses of the stone quarries and the varieties of stone and of the positive and negative impact of the stone industry on the environment and public health in Rajasthan as well. Rajasthan is one of the most popular tourist destinations in India, for both domestic and international tourists. Rajasthan attracts tourists for its historical forts, palaces, art and culture. Besides the various popular industries like textile, marble, garment industry and Rajasthani prints, printing, dyeing industry, Rajasthan is especially known for its stone industry which has long been constantly been flourishing making the state rich through revenue and employment on the one hand, and on the other, causing risk to the environment and the life and health of the thousands of people involved in it. Several districts of Rajasthan, such as, Bharatpur, Dholpur, Kota, Jodhpur, Sawai Madhopur, Bundi, Chittorgarh, Bikaner, Jhalawar, Pali, Khatu and Jaisalmer together constitute the stone industry of Rajasthan which has given an important issue to be discussed by the scholars and environmentalists. The issue is how to continue it for the sake of the prosperity of the state without causing loss to environment and to the health and life of the people. The current picture of the stone industry in Rajasthan is shocking from the environment point of view, but the profits that it brings in various forms minimizes the shock. The scholars have long been attempting to find some strong solution to the various negative aspects associated with the stone industry. At the same time, attempts are being made at the government and non-government level to generate new possibilities of the progress and development of the stone industry. The research paper, based on the secondary data produces, primarily, the picture of the stone industry reflection in the international research papers and secondly, of the positive and negative effects on the environment and public health in the state of Rajasthan

Keywords: International Research, Constant, Unexplored Possibilities, Investment, Import And Export, Quarrying And Production, Environmental Pollutants, Public Health, Revenue, NGO, Explosion.

Introduction

India enjoys an envied reputation in the global market. Eversince it has conquered over several other nations in terms of economy and economic development. Though recognized still as a developing nation, it has set several milestones in the field of trade and commerce. The Prime Minister Mr. Narendra Modi's constant and indefatigable efforts to link India with the economically distinguished nations have paved a solid path of economic development for India. India is likely to be the most popular country in terms of economic growth and development. As per latest news published by the World Economic Forum, India is the 7th largest economy of the world. The International Monetary Fund (IMF) has predicted that the Indian economy will be the fastest growing economy in the world and expected to grow at the rate of 7.4% in the FY 2018. The three-sector theory is an economic theory which divides economies into three sectors of activity: extraction of raw materials (primary), manufacturing (secondary), and services (tertiary). It was developed by Allan Fisher, Colin Clark and Jean Fourastie. The Indian economy is classified in three sectors- Primary, Secondary and Tertiary

Primary Sector

Primary sector of economy is a major sector that includes harvesting of the products from the earth, production of raw material and basic foods. Activities like farming, hunting, fishing and quarrying are associated with the primary sector of economy. Packaging and processing of the raw material also lies in the primary sector.

Secondary Sector

Like the primary sector, the secondary sector of economy is also an important sector that includes finished goods manufacturing, production of aerospace, textile and automobiles, construction etc. It being a very large sector includes all the types of production in the industries.

Tertiary Sector

The service industry falls in the category of the tertiary sector which provides services to the general population and to businesses. Retail and wholesale sales, transportation and distribution, entertainment, restaurants, clerical services, media, tourism, insurance, banking, healthcare, and law and several other service providing activities are tertiary sector associated activities.

All the above mentioned three sectors, namely, the primary, the secondary and the tertiary reveal India's richness in almost every field. It will not be unfair to admit that all the three sectors combinely make India a rich nation.

According to the report of Ministry of Statistics and Programme Implementation

Three sectors of the Indian economy in the FY 2016-17 at the current price

Sector	GVA (Rupees in Crore) at current prices (2016-17)	% share
1.0 Agriculture Sector	2,382,289	17.32 %
1.1 Agriculture,forestry & fishing	2,382,289	17.32 %
2.0 Industry Sector	3,989,791	29.02 %
2.1 Mining & quarrying	309,178	2.25 %
2.2 Manufacturing	2,278,149	16.57 %
2.3 Electricity, gas, water supply & other utility services	338,396	2.46 %
2.4 Construction	1,064,068	7.74 %
3.0 Services Sector	7,378,705	53.66 %
3.1 Trade, hotels, transport, communication and services related to broadcasting	2,538,162	18.46 %
3.2 Financial, real estate & prof servs	2,896,300	21.06 %
3.3 Public Administration, defence and other services	1,944,243	14.14 %
GVA at Current Prices	13,750,786	100.00 %

Source- Economic Survey of India, 2017-18

Stone Industry at A Glance

The stone industry is associated with mining and quarrying. In the name of construction, whether the construction of small or big buildings or monuments, nothing is imaginable without stone. The structures erected in the construction reveal the core importance of stone which is used for several purposes beginning with the khandas in the foundation to the buchs in the finished buildings. Many economies have emerged from the global economic recession and the use of natural stone is resurging, continuing the trend and desire for natural stone begun centuries ago.

The "Global Stone Processing Machines Market 2017-2021" report (Research and

Commission, Government of India, 21 March, 2017, the contribution of Agriculture sector, industry sector and services sector in Indian economy is respectively 61%, 30.5% and 63.5%. Contribution of the primary sector is 17.32% with GVA of Rs around 23.82 lakh crore while the contribution of the industrial sector is 29.02% with GVA of Rs. 39.90 lakh crore at the current prices in 2016-17.

Economic Survey-2017-18 presented by Finance Minister Arun Jaitley in both the Houses, says that the rate of economic growth for the financial year 2018-19 will be between 7% to 7.5% whereas for the fiscal year 2017-18, it is expected to be around 6.5%. The agricultural growth rate is expected to be 2.1% for the financial year 2018 and industrial sector is expected to grow at the rate of 4.4% in the same period.

The survey brings new hopes to the world of Industry and to the industrialists who want to invest more and more of their capital in some industry that can ensure them a huge profit at the minimum of risk. It is obvious from the survey that the economic growth is on progress and is going to give a new shape to the Indian economy. It is all because of the efforts of the present government which aims at taking the economic growth at an immensely higher economic planet that can ensure not only a matchless economy but also the economic well being of the common people through job opportunities.

Markets ,Feb 16, 2018, 12:45 ET) says that global stone processing machines market is going to grow at a CAGR of 4.58% during the period 2017-2021. One trend in the market is innovation in stone processing machines. Technological advances help create better stone processing machines as they are manufactured with more precision, quality, and speed. Various stone processing machine manufacturers are investing in R&D to offer innovative products to various end-users, thereby spurring the demand for stone processing machines globally.

The indifference of the owners of the commercial buildings to the use of synthetic building materials has led to the growth in demand for natural

stones, such as marble and granite, in commercial and residential construction projects.

It is hoped that the number of commercial buildings is likely to grow very fast during the few next years. The eco-conscious drive for the construction of buildings which prefers the use of natural stones to the synthetic stones, is on, and is an indication to the growing demand for stone processing machines. It will not be wrong to mention that India has the shortage of skilled labor. The report of Government of India's survey, in 2017 says that the present skilled workforce constituted only 2% of the overall workforce in the country. It means that the lack of skilled manpower is going to lead to increased labor costs which will result into the increase in the cost of production in the stone processing sector.

The Indian mining and quarrying enjoys an immense international reputation. In all the four directions of India, there are stone mines and quarries. It is enough to prove that India is a leading stone quarrying and manufacturing nation. India has major resources of marble, granite, sandstone, Kota stone, quartzite & slate. Granite resources are largely in South India and Marble deposits are largely in Western India (Rajasthan & Gujarat).

The Indian natural stone industry is known for the production and the manufacturing of dimensional stone blocks for monumental and building purposes. It is indeed remarkable that there are several reservoirs of various types of natural stones in its various parts. India enjoys a global identity because of the manufacturing of granite in southern states, marble in Rajasthan, sandstone and limestone in Rajasthan in addition to some other states of India.

Though a name in the international stone market, China is its most serious contender, especially in the granite trade due to its lower prices. Spain is its another contender. Just because of the low priced stone produced in China and Spain, India is unable to be at the top. The extended survey by Hina Latif, prepared for Big 5 Construct India, presented in Thebig5hub reports that Federation of Indian Granite and Stone Industry has been working since 1983 for their progress and scientific development as well as in removing obstacles to achieve rapid and constant growth. FIGSI works for the promotion of the Natural Stone Industry and acts as a bridge between Industry and the Government.

The above details are neither idealistic nor mythical but real that confirm India's promising position in the international stone industry. The day-by-day rapidly increasing export rate of the Indian stone put a stamp on it.

GLIMPSSES OF INDUSTRIAL SECTOR IN RAJASTHAN

Easy access to largest consumer markets, Rajasthan touches six major states of the Northern, Western and Central India. Rajasthan is called a corridor between the wealthy north and the prosperous west. Both the north and the west provide a convenient access to the two largest consumer markets in India. Its strength includes mineral based industries, textile, tourism and gems & jewellery. It is

also the leading producer of cement and metals such as copper, zinc and lead and the largest producer of marble and stones in the country. It is just because of the industrial growth in the state that it is turning out to be the best in every field whatever it is. Business and economy of Rajasthan include agriculture, industries, mining and tourism as well. Since 1950, Rajasthan has been the lucrative hub of industrialization. Illustrious Business Communities like the Singhania, the Birlas and the Shrirams established large scale business enterprises in the state of Rajasthan.

Key industries in Rajasthan

1	Cement	6	Auto and auto-components
2	IT and ITeS	7	Ceramics
3	Mining	8	Tourism
4	Agro-based industry	9	Textile
5	Gems and jewellery	10	Marble

Though least at no. 10 in the list, Rajasthan is probably one of the best and most popular consumer market of stone, and specifically of marble which provides several varieties of marble to the consumers at home and overseas. Not only marble, other stones quarried in the state acclaim it a hub of stone. The stone industry in Rajasthan is going through a positive momentum, unlike that in the south. Not only new granite quarries are opening, the sandstone and marble industry along with its traditional stone craftsmanship continue to find demand both in India and abroad. Mining policies in different parts of the country continue to be in a mess. Environmental concerns have become a major concern for the authorities, but new clear and stable policies reflecting these concerns are either still not in place, or businessmen are struggling to adjust to them.

Objectives of The Study

1. Having an idea of the sourcing of new products and drive sales in the stone industry as reflected in international research
2. Being familiar with the innovations and latest technologies in the industry as mirrored in international research papers
3. Gaining insight into new strategies and ideas found in latest international researches
4. Correlating new business relationships in the stone industry on the basis of the international research
5. Finding glimpses of the global market research
6. Reviewing the available literature on the subject
7. Drawing fruitful conclusions on the reflection of the stone industry in international research

Review of Literature

Dr. Kalpana Agrawal & Parupriya Singh Gaharwar (2013) in their study "A Study on Trend of Export of Natural Stones from India to Various Countries" carried with the aim to attempt to study the trend of export of natural stones from India to various countries on the basis of its past export performances to these countries, observe that India is a major exporter of natural stone, which is the second largest

foreign exchange earner for India besides iron ore in minerals category. The study reports that Finnish stone companies export 90% of the stone production and have a strong experience of the global business environment. The EOU scheme, which was introduced in 1980, helped the industry to modernize as it opened a window to usher in latest technologies for stone processing. India has immense potential for growth of exports in this sector.

Rajni Lakhani, Rajesh Kumar and Priyanka Tomar (2014), in the study entitled "Utilization of Stone Waste in the Development of Value Added Products: A State of the Art Review" made with the objective to review work carried out on the use of stone waste as a partial non-pozzolanic replacement for sand in mortar and concrete and in the containment of hazardous wastes, observe that the utilisation of stone waste, in the form of mineral admixture as a pozzolanic and non-pozzolanic material for mortar and concrete has received considerable attention in recent years. This interest is part of the widely spread attention directed towards the utilisation of wastes and industrial by-products in order to minimise Portland cement (PC) and sand consumption, the utilization of which being environmentally damaging. The study finds that stone waste can be utilized for developing low cost building materials such as block, brick, tiles etc.

Rahul Anand, Kalpana Kochhar, and Saurabh Mishra (2015) in their study "Make in India: Which Exports Can Drive the Next Wave of Growth?" conducted with the objective to analyse India's exports by the technological content, quality, sophistication, and complexity of the export basket, explore that structural transformation depends not only on how much countries export but also on what they export and with whom they trade. The study finds five priority areas for policies: (1) reduction of trade costs, at and behind the border; (2) further liberalization of FDI including through simplification of regulations and procedures; (3) improving infrastructure including in urban areas to enhance manufacturing and services in cities; (4) preparing labor resources (skills) and markets (flexibility) for the technological progress that will shape jobs in the years ahead; and (5) creating an enabling environment for innovation and entrepreneurship to draw the economy into higher productivity activities.

Report of Government of India, Ministry of Mines Indian Bureau of Mines (Nov. 2016) says that the demand for marble and other dimension stones, viz, granite, sandstone, etc. and stone products is anticipated to scale up at around 15% CAGR. A similar rate of growth in exports can also be achieved with the help of suitable policy framework, infrastructure and other facilities which are expected to be provided to the industry. The Working Group has recommended that there is a strong need for well-planned, concerted and dedicated efforts towards export promotion of Indian stones. The emphasis needs to be on popularisation of Indian stones in both the traditional markets and exploration of new avenues by strengthening the activities of the Centre for Development of Stones (C-DOS) in Rajasthan by

upgrading it into a national centre of excellence. Centre for Development of Stones (C-DOS), Rajasthan, a state government agency, has been recommended to be upgraded and re-designated as a National agency for technology/skill upgradation, market development support, etc. for marble. A separate national agency is required to be established in southern India for development of granite and other stones.

Pradeep Kumar Gautam, Dr. Pawan Kalla, Dr. Ajay Singh Jethoo and S.C. Harshwardhan (2017) in their study entitled "Dimensional Stone Waste Characterization in Rajasthan and Suggesting their possible Remedies", made with the chief concern to critically examine the different stages of this waste production, their effects on flora-fauna and possible remedies to manage the waste in a sustainable way observe that Rajasthan is endowed with one of the largest reserve of dimensional stones like Granites, Marbles, Kota Stone etc. which makes it suo motu one of the largest stone industrial hub of the country. With time as the demand of these stone increased in the market, their mining also increased exponentially which in turn increased the amount of waste production at various manufacturing stages of these dimensional stones. The study finds that from the inception of the mining and manufacturing of these dimensional stone, no proper care were taken to control, reduce or recycle the waste produced, leading to accumulation of these waste in nearby ecological areas and disturbing ecosystem.

Hypotheses

The following hypotheses formed the basis for the writing of the paper-

1. Stone industry is one of the most fast progressing industry in the world
2. India is the exporter of the various types of stone quarried in the various parts of India
3. Rajasthan rich in mineral resources is rich in stone mines where millions of metric tons of stone is quarried and manufactured everyday
4. Stone industry is both profitable and harmful
5. It is profitable as it adds to the national income, and harmful as it pollutes the environment in addition to having negative effects on the ecology.

Methodology

The study is based on the secondary data available in the form of research papers, reports and books and published in the various international research papers and reference books. The steps that were undertaken in order to prepare the paper are as follows-

Steps Taken for the Study	
1	Search of the related study material on the stone industry in international research in reference books, international journals and websites
2	Categorization of the available study material as useful and futile
3	Capturing the spirit of various aspects of the theme through the study of the material found suitable for the purpose
4	Analysis of the Secondary data found

	useful for the purpose of the study
5	Getting a detailed and serious idea over the international research on the subject
6	Paving the path for the researchers through the researches found on the theme
7	Projecting the brief scenario of stone industry in the international research

Conclusion

The international research on the stone industry of India places Rajasthan as the richest stone producing state in the country. The glimpses of the Rajasthan stone industry are exploratory through the various international journals on humanities, international reference books published by international publisher, theses submitted to the various universities and colleges of international fame and recognition, and through the esteemed research papers presented at the international conferences organized in the country and overseas and reports projecting the stone industry of India at the international level.

To conclude, the international research finds Rajasthan as the second most mineral rich state in India which makes about 90 per cent of the country's total natural stone production. There are 3403 mining leases for major minerals and 11 861 mining leases for minor minerals, as well as 18 249 quarry licenses in the state. The districts which are entirely dependent on mining have a lower literacy rate than the national average. Thousands of small, often individually owned mines operating on roadsides and informally employing men, women and children to hand-mine the stone. Stone is then bought – usually in cash – from the roadside, and it travels up the supply chain from there.

Most of the quarries in Rajasthan have the status of small-scale and unregistered ones. It is embarrassing to find that standards of occupational health of the workers and safety are not rigidly observed. As a result, there are noted high and uncontrollable injury rates. Because of the calculation of the wages on the piece rate basis, labourers who are physically stronger earn more than other workers.

Hence, not to be taken for any controversy, but the international researches found in the various sources, produce a drastic picture of the Indian stone industry which requires much improvement in all the associated aspects in the interest of public and for the sake of a good and healthy environment. Certain suggestions made for how the stone industry can be continued in future with the least risk to the environment and ecology and public health are also found in the international researches which show a serious concern of the environmentalists.

To epitomize, the Indian stone industry including the Rajasthan stone industry, fluctuating in nature, is threatening the peace and environment through its pollutants. The mining concerns like explosions and working under unsafe conditions etc. put the stone industry in the danger zone, but the immensely huge profits that it brings to the industrialists and to the government guarantee its continuance. To have a balance, there is a need to make it prosper in a way that at the minimum of risk to

life, public health and ecology, it keeps on going ahead setting new milestones every hour in the concerning field.

It may be possible through self awareness, government policies associated with ecological protection, public health and human rights. All this is already there, but only in theory not in practice. Let us be hopeful that in times to come, there will be certain positive changes and amendments as well as policies and schemes for the welfare of the workers in the public and ecological interests. Maybe someday, India becomes the pioneer in the field of stone industry with new ecological and environmental and public health policies.

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