

A BRIEF STUDY ON STONE CRUSHING

BUSINESS IN JOTSOMA

*Project report to be submitted to Nagaland University in partial fulfillment for the award of the degree of
Bachelor of Commerce.*

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DECLARATION

I declare that the project report entitled ‘A BRIEF STUDY ON STONE CRUSHER OF JOTSOMA’ submitted by me for the award of the degree of **Bachelor of Commerce** of Nagaland University is my own work. The project report has not been submitted for any other degree of this University or any other university.

JAMES MARAK

CERTIFICATE

I forward this project report to be placed before the examiner for evaluation.

NGIPLON RACHEL CHOHWANGLIM

Supervisor

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I am extremely grateful to our miss for giving us this project where it has enable us to do a lot of self study as well self research .It has also help us to understand our capability of doing a research without depending on any other sources available to us.

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CHAPTER - 1

INTRODUCTION

1.1 Background

JOTSOMA is a village that is located 7 km away from Kohima district. It is very rich in its natural resources with regard to stone crushers. Almost every where one will find a stone crusher not far away from the other. Most of the people own a stone crusher as it is one of the major earning source. Most of the supplies regarding chips, stone dust, and gravels are supplied from Jotsoma. Some district in Nagaland also depends on the materials supplied from Jotsoma for the fulfillment of their various building necessities. With regard to development of kohima as smart city stone crushers has played a major role in supplying materials for the constructions of footpaths, roads, drainages, etc. The demand for quality stone is rising day-by-day. This research is base on how stone crushing business is also consider as one of the most important source of development in Nagaland, how the people of Jotsoma engaged in this business earn a valuable profit.

1.2 Literature review

Ibrahim Muhammad Adam (2019)

According to **Ibrahim Muhammad Adam** (2019) survey done on informal stone crushing sub-sector and its implication on employment and income generation in jigawa state Nigeria. Stone crusher is a global phenomenon which entails quarrying of natural stones including sand gravel rushed rocks that represents the main source of construction materials used throughout the world. The study is set to explore the livelihood outcomes realized by the stone crusher and local communities arising from informal stone quarrying activities and its implication on poverty reduction. The study used primary data collected from 402 stone crushers and 5 crushing sites across the sites. Descriptive statistics was used to describe the characteristics of stone crushers in the state multivariate regressions logistics regressions and multidimensional regression poverty index (MPI) models were employed to analyze the data on income and poverty reduction of stone crushing. The study further reveals that stone crushing entrepreneurs average daily income number of operation are the key determinants of poverty reduction amongst quarry entrepreneurs in jigawa .The policy implication of the study is that policy makers should formulate and implications pro-poor policies that will support , modernize and transform the stone crushing enterprises particularly in the provisions of modern equipment ,stable electricity and physical infrastructure which empowers them to work full time . This study reveals that this will enhance the stone crushing entrepreneurs earning capacity saving levels working days employment creation and poverty status.

SADIK GIZAW st. mary's university,2019(ASSEMENT OF ENVIRONMENTAL AND SOCIO OF QUARRYING AND STONE CRUSHING :THE CASE OF ETHIOPIANS CONSTRUCTION WORKS CORPORATION).

According to the survey done by **sadik gizaw** in Ethiopian construction company which is a giant construction company working on construction of road, dams, airfield, bridge building and maintenance of roads, dams building and maintenance of roads all over the country . sadik reveals how secure livelihood have become a major concern for both rural and urban residents. sadik further reveals that quarrying and stone crushing are major activities which are done in all projects and districts of the company to produce aggregates. Sadik also reveals how the quarrying and stone crushing have considerable effect on the environment quality and human health. This research works attempts to addresses the environmental and socioeconomic effects of aggregate production and identified the possibilities strategies that helps to reduce this effects. A total of 144 respondents were contacted for relevant information through structured questionnaires administration, interviews and field observation .quantitative methods such as chi-square ,relative importance index and descriptive statistics were used to interpret the data collected .quarrying has a significant importance on job creation and better income generation to stone workers and the surrounding community to reduce poverty. Regarding to the environment, the quarrying and stone crushing activities together with poor management of quarries resulted land degradation, loss of plantations, air pollution and noise pollution .furthermore the health of the workers and residents is affected collaboration among key stakeholders in sectors such as environment protection (EPA). In conclusion sadik bring out that local government bodies and local communities is needed to enhance the utilization of resources and minimize the effect of quarrying on the natural environment through awareness creation, proper management and rehabilitation of abounded quarry pits for other function and sustainable environment. . Certain guidance are being taken for controlling dust from stone crusher mills

1.3 objectives

The objective of my research is to know

1. How profitability is stone crushing business.
2. Why people of jotsoma depend on this type of business.
3. How the owner sale their produced quality stones.
4. The market demand of quality stone.
5. How much capital is required to set up such business?
6. How much capital is required to operate day-to-day business?

7. How do the owners bring together man and power capital to operate their business.
8. Stone crushers are a major source of pollution. How does this effect human health and the environment.

1.4 Research questions

Prospect of stone crushing business in jotsoma are:

1. With the increasing demand of quality stone more crusher are set up. Land and building are major fixed cost.
2. Stone crushing business has an earning capacity of 3-4 cr a year after deducting all expenses.
3. Since jotsoma is a hilly area and is rich in stone quarrying setting up of some crusher is also a good type of business.
4. the quality stone produced by crushers id not used in the development of smart city but also in construction of four lane road(kohima to Dimapur).
5. One of the prospects is it is operates wit less amount of capital.

Problems faced by the owners' in setting up their business

1. Finding a location to set up their machines

First difficulties faced by the owners are to find a good location to set up their machine where the road condition is good. Raw materials are available nearby.

2. Purchasing of machine

In order to purchase they should place the order first. The price of JAW CRUSHER machine is 2 lakh, vibrator for screening is rupees 1laks, electric transformer rupees 1 lakh, AC motors 20,000for crusher and rupees 5,699 for vibrator.

3. Trasportation of raw materials for quarry

Transportation of raw materials is also one of the problems face by the owner , if the rood condition is not good or the road slides due to heavy rainfall they face difficulties in transportation boulders. For transporting boulders one need to have dumpers or truck to bring the boulders near to the machine for crushing.

4. Financial need.

Financial need is also one of the problems face, when the quality stone is sold in credit basis the billing takes time **for example** peoples who supply their crushed quality stone in the four lane road construction from Dimapur to kohima they didn't get their payment and they are finding difficulties in operating and upgrading their business

1.5 Research method

1. Resource was collected through Primary source by visiting peoples and the owners of the stone crushers and local peoples in Jotsoma.
2. Secondary data are collected from articles from Google scholar and from website
3. Face to face interaction.
4. Interaction with the workers.

CHAPTER -2

DATA ANALYSICS AND INTERPRETATION

2.1 Raw materials and its price

Since stone crushers need stones to produce quality stones such as chips, stone dust, they depend on quarrying for the supply of their raw materials. The price of stone (which is usually called as boulders) is rupees 5,600 per load. They bring boulders from quarry through truck which has a loading capacity of 400cft, 450cft and some even 600cft (Cubic feet). The boulders are been taken out by excavators n breakdown the boulders into small pieces through rock breaks which can be easily crush down by crushers. The owner of the stone crusher hires laborers for running the machines, the laborers charge rupees1000 per load (i.e 400cft) or some even wages like rs 500 per day. The price of the quality stones which is usually called as 3/4 chipping is rs 60 per cft(Cubic feet, stone dust rupees 25 per cft(Cubic feet) and 1/2 chipping rs 30 per cft(Cubic feet.

2.2 Quality stone produced by them.

- 3/4 mm chippings are the most demand quality stone this chipping is used for building purpose. The Price of this quality stone is rupees 62 per cubic feet.



- 1/2 chipping is used for road and building purposes it price is rupees 38 per cubic feet.



- Stone dust, this is mostly used for retaining walls and construction



- 1 inch gravels is used in construction and its demand is not high so they recrushed it



2.2 DEMAND OF QUALITY STONES

The demand of the quality stone are shown below with the help of

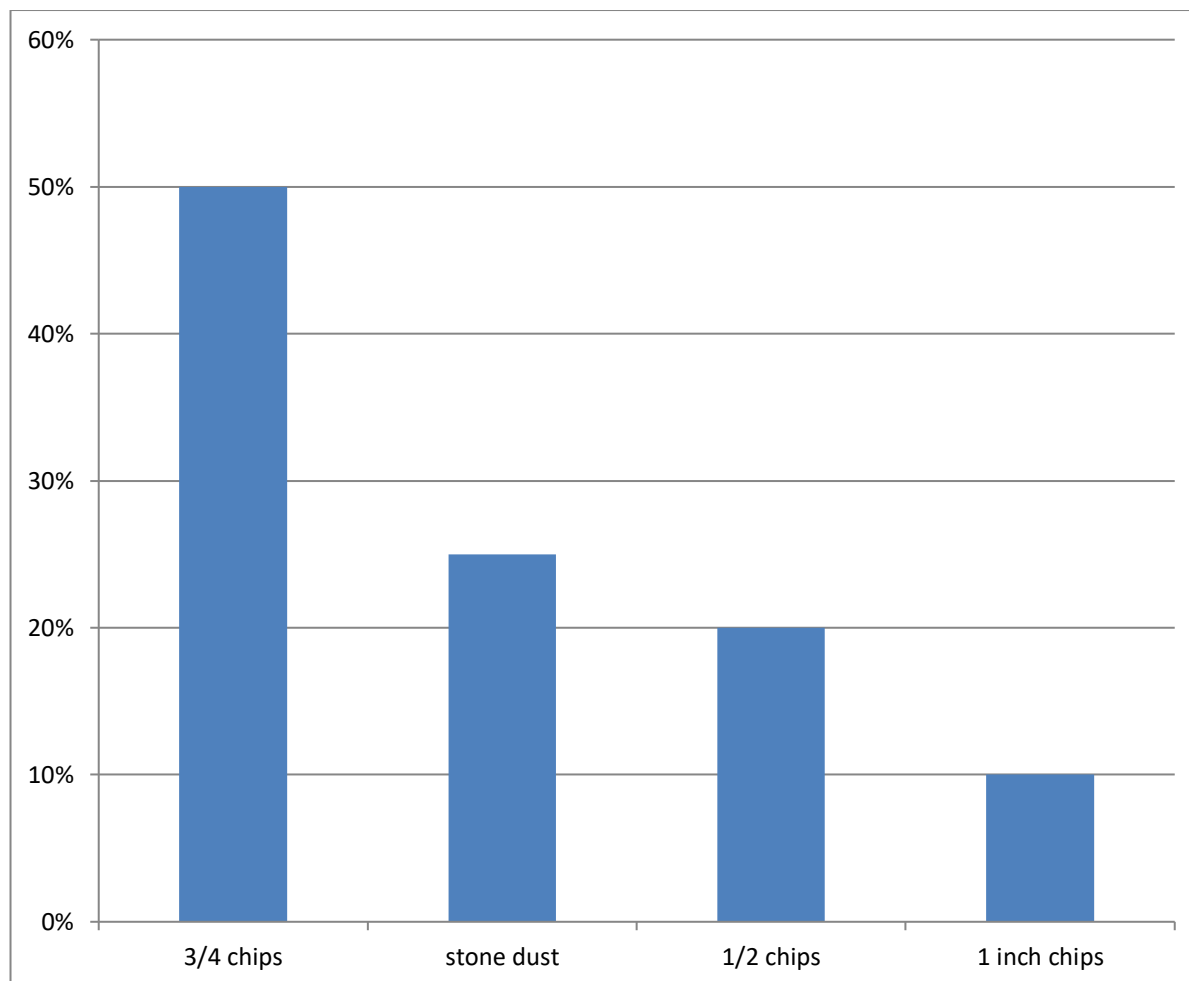
$\frac{3}{4}$ chips is usually use for building purposes. Due to speed up gradation of big buildings the demand is increasing. The demand for $\frac{3}{4}$ chips is high as compared to others.

Stone dust is mainly used for making walls which are mixed with cements and use in holding boulder in walls.

$\frac{1}{2}$ chips is used in making roads when there is construction of road going on the demand of $\frac{1}{2}$ chips increases. There is a huge quantity of $\frac{1}{2}$ chips stock in every stone crusher because it is not always in demand; the demand for chips is only in one season.

1 inch gravels is Recrushed in every machine. There is not much demand for this quality.

The demand of the quality stone are shown below with the help of:



2.3 Profits earn by owners

Stone crushing business has been a major wealth for the people of Jotsoma not only stone crushing but also quarrying. The owner of a stone crusher earns a maximum profit of rupees 30000 after deducting all expense if there is a sale in a day. The demand for quality stone is sometime high sometimes low especially during rainy season because of the rain the demand also goes down. Owner of a stone crusher earns rupees 1 lakh or sometimes even 2 lakh after deducting all expenses. The quality stone are sold to private customers, to the road contractors, building contractor on a monthly or weekly payment basis.

2.4 Challenges face by the owners of stone crushers

The challenges faces by the owners of stone crusher are:

1. Bringing of boulders from the quarry is also one of the challenges faced by them.
2. Sometimes boulders are not available in their own quarry they have to go on searching boulders in nearby quarry.
3. During rainy season the laborers' are unable to work and there is a shortage in the boulders and the owners find difficulty in supply the materials if there is any order.
4. When the payment is not made by the customers the owners find difficulties in paying wages, salaries, electricity bill, etc.
5. Paying of taxes to undergrounds is not one challenge face by the owner of a stone crushers.
6. During rainy season when the roads of quarry is blocked by landslide the owner find hard to bring the raw materials.
7. When the machine is not running or the machine is damage the spare parts are not found in kohima they have to go down to Dimapur to purchase the spare parts.
8. During rainy season the workers are not able to work which led to the decline of quality stones.
9. During windy season electricity problem.

CHAPTER - 3

CONCLUSION

3.1 Findings

During the process of stone crushing huge quantity of dust is produced which floats in the air and spread all around the crushers, the people living there are not able to even dry their cloths because dust floats in the air which comes and settle down in the dry cloths. Noise pollution is one of the main problems of people living there. No appropriate name is given to a particular machine. People or customers know them by their names. Owners for all stone crushers are very kind and generous all of them give donation for any building purpose done in the village, e.g. roads government school development, footpaths, church building, public toilets or any retaining wall done in the village. It has found out that most of the workers are illiterate. There is no any special protection for their body

During the research I also found out that in most of the crushers their demand is increasing but they are unable since there is lack of man power and some don't find boulders. Besides crushing some crusher owner's even bring big boulders in machine which is cut through machines i.e. angle grinder and man power to make box shape which is locally called Rada for construction of wall. Before the crushers owners supply their quality stones to BRO (broader road organization) but now day many upcoming private entrepreneur are helping in developing a smart city most of the quality stone are supplied to them. The difference between BRO and Private entrepreneur is that private entrepreneur give payment when they have adequate fund to operate while BRO is a central road construction company they give payment on monthly basis. I also found out that the quality stones are supplied even to some other districts like pftseuro(phok),peren etc. During the pandemic most of the crushers quantity stone are in stock they are not able to sale or supply. Some financially strong crusher owners are able to operate while some are not able to. Year by year the numbers of crusher are increasing. Slowly by slowly there will be a competition even in the quality of stone. It has also found out that stone crusher are also benefiting the truck owner by selling their quality stones to them and they carry the quality stone and sale it to the customer who order them building purpose or any other construction purposes. It has also found out that the customers need not come and buy but they can contact the managers or the owner, and give proper information about the address they will deliver the quality stone ordered by the customer, and make payment by cash or transfer them via net banking or Google pay. It has found out that all stone crusher crush same quality of stone some crush hard stone, some river boulders some quarry boulders. It has Stone crusher has an earning capacity of 3-4 cr a year after deducting all expenses.

Conclusion

Stone crushing business in good location running smoothly will helps in the speed production of quality stones. Stone crushing business is a Profitable business If the crushers is located in a nearby places if the crusher is located in very

bad location where customers don't know the location then the crushers will not be able to earn profit. Stone crusher can be easily relocated for service & maintenance purpose. It is a simple design features. Stone crusher is a Profitable business for new entrepreneur.

3.2 Suggestions

- The owner of the stone crushers should help the laborers working there by making them aware about the machine and using safeguard like mask, glove.
- The owner should give special training to the employees.
- The owner should keep in mind how stone mining & crushing is disastrous to environment.
- During windy season workers are unable to work due to huge amount of dust realize they should use proper mask & spectacles or sunglasses to protect their eyes.
- The owner should educate the workers on how to use the machines.
- Owner should educate the workers how harmful it is to human health when inhale dust while working.
- According to the statement given by one of the workers "the damage done to the human health is probably more serious than that done by cigarettes.

3.3 Conclusion

Stone crushing industry is an important industrial sector in the country engaged in producing crushed stone which act as raw materials for various roads bridges building, etc. Since stone crusher are a major source of development it is consider a part of most profitable business. They don't need any advertisement to promote their quality stone. Its demand is increasing day-by-day the production is also increasing .people are using advance modern machine to upgraded their production. Good location is needed to set up such machines some don't find good location so they are unable to upgrade and their production. Some owners are using JCB to increase the speed of crushing while some are still depend on human force. stone crushers are easily managed it don't required any specialized skills to operated or to work there, only need is that u need to be aware of how harmful it is to health & environment used proper safe guard. Stone crushing is a very good idea for business only required is capital to set up the crusher. It is the major source of income. Stone crusher is not only used in producing quality stone but also in cement factories and many more. Stone crushing is considered as harmful for environment and human health.

APENDIX

1. Year of establishment.
2. Most demanded quality stone.
3. Purpose of the quality stone.
4. Price of the crushers.
5. Capital need to set up such type of business.
6. Problem face by the owners in bringing raw materials.
7. Price of the quality stones.
8. Any remuneration benefits given to the workers.

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Venod Shinde project report on stone crusher plant.

Guidance for controlling silica dust from stone crusher

<http://www.okinternational.org>