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CHAPTER I

Meaning of Research-

There are accepted truths and theories in all fields of knowledge. The intellectuals of the society are always inclined to probe for facts of the empirical world and confirm the proved truth of his investigations by accepting or correcting the existing theories. Such probing is called research. All research is the collection of evidence or information for ascertaining an assumption or verifying some hypothesis. It can be said that research is an inquiry or search for fact or truth.¹

The contents of various sources of law (legislation, precedent, custom, juristic writings etc.) change with the changing requirement of the society and if these changes are not taken into account in interpreting the law, the existing law is bound to be doomed.

Therefore, the aim of law is to regulate the human behavior in the present day society and hence, legal research must be directed to the study of the relationship between the world of the law and the world that the law purports to govern.²

Definitions of Research-

According to Manheim, Research is the careful, diligent and exhaustive investigation of a specific subject-matter, which has its aim and the advancement of mankind's knowledge.³

¹ Legal Research Methodology - Dr. S.R Myneni

² Research Methodology – ShipraAgarwal

³ Legal Research Methodology - Dr. S.R Myneni

Redman and Mary define the research as “systematized efforts to gain knowledge”.⁴

According to Lundberg, “Research is a method sufficiently objective and systematic to make possible classification, generalization and verification of the data observed.”⁵

According to the webster’s international dictionary-Research is a careful, critical inquiry or explanation in seeking facts or principles, diligent investigation in order to ascertain something⁶.

Objectives of research

the main aim of research is to find out the truth which is hidden or which has not been discovered has yet. though every research has its own specific purpose, however the purposes or objectives of research may broadly be classified as follows-

- 1) to gain familiarity with a phenomenon or to achieve new insight into the existing facts(explanatory or formulative research studies.).
- 2) to portray accurately the characteristics of a particular object, situation or groups(descriptive studies).
- 3) to determine the frequency with which something occurs or with which it is associated with something else.(diagnostic or co-relational studies)
- 4) to test a hypothesis of a casual relationship between two objects(hypothesis testing research)

⁴Legal Research Methodology - Dr. S.R Myneni

⁵Research Methodology – ShipraAgarwal

⁶ Research Methodology- ShipraAgarwal

INTRODUCTION OF MINING

WHAT IS MINING ?

Mining is the extraction of valuable minerals or other geological materials from the earth, from an ore body, vein or (coal) seam. the term also include the removal of soil. materials recovered by mining include base metals iron, uranium, coal, diamonds, limestone, oil shale, rock salt, and potash. any material that cannot be grown through agricultural processes or caused created artificially in a laboratory or factory, is usually mine. mining in a wider sense comprises extraction of any non renewable resources(e.g. petroleum, natural gas or even water)

Set on India's west coast, Goa is renowned as a beach paradise popular with Indian and foreign tourists alike. just a few miles inland from the quaint restaurants and the pristine waves lapping the silver shores of India's smallest state, iron-ore mining is destroying the environment.

Mining has been a very important element in the economic history of modern Goa and a significant foreign exchange earner for the state. In early 2012, it has designated as the mining industry at par with tourism. It has provided the trigger to boost economy of the mining taluka's. Certain natural factors like the presence of coastline, a very good natural harbor at marmagoa and a number of navigable perennial rivers have promoted the economic exploitation of mineral deposits. Transport of ores by barges is the cheapest option as compared to road and rail transport. Goa is a major iron ore exporting state and over 60% of country's iron ore export is from Goa. In terms of foreign exchange earnings it amounts to nearly Rs. 1000 crore per annum.

Joseph wood krutch said- “ when we destroy something man-made and replaceable, we are called vandals. when we destroy something irreplaceable and made by god, we called developers.

Mining in Goa is done by open cast method which necessitates the removal of overburden overlying the iron ore formations. On an average about 2.5 to 3 tons of mining waste has to be excavated so as to produce a ton of iron ore. The average annual production of iron ore is about 15 to 16 million tons, in the process removal of which about 40-50 million of mining waste is generated. Such a huge quantity of mining waste creates a problem for its storage thereby causing severe environmental pollution.

In Goa, mining is mainly concentrated in five talukas namely, Bicholim dharbandoda and sattari of North Goa district and, Sanguem and Quepem of South Goa district. Goa has deposits of iron, manganese and bauxite, the mining belt covering approximately 700 sq. km. There are almost 400 mining leases had been granted in Goa covering approximately 30,325 ha — this works out to almost eight per cent of the total geographical of the state with number of mines is increasing every year; especially during last one year it has shown significant growth. Mining and associated activities have greatly affected the natural landscape in and around these areas, which is characterized by the presence of pits and waste rejects. These wastes are washed by heavy rains into rivers. Goa encounters about 120 inches of rainfall annually. When the economically valuable deposits of these are exhausted only the low-grade ones remain which can be plundered because of Goa's proximity to the sea, which makes easy export. "The lower the grade, the larger the quantities of earth that must be mined, hence the greater the environmental impact". Similarly today, more than 80 mining leases operate in forested areas of the

State of Goa. They require the destruction of forests on private properties or government-owned forests. Most mining operations are within the Western Chats. Talukas like Sanguem in which many mining leases have been approved are thickly forested. Majority of the government forests allowed for mining have in fact already been notified as Reserve Forests that protection, however, has not been a bar to their destruction at the hands of the mining industry and the Government.

Minerals play an important role in the economic development of the country as minerals are the basic raw materials to promote the growth. the development and extent of judicious utilization of mineral resources adds to the index of growth of a state and its people. the mineral industry in Goa is reckoned not only as an important contributor to the country's GDP and foreign trade, it is also one of the major industries that absorb a considerable amount of the state working population.

However, indiscriminate and unplanned mining causes irreversible damage and deterioration of natural resources. Mining activities affects surrounding i.e, air, water, soil, land, biological diversity etc. the environmental impacts of mining activities may have short term as well as long term implications. It was very important to take necessary precautions before mining operations are laid down to ensure sustainable development.

Since the mining activities was considered as important economic and earning source in the state of Goa, where closure of mining leads to several Problems like Poverty, Unemployment and the same leads to several problems among the communities .⁶

⁶ : <http://www.jagranjosh.com/current-affairs/goa-introduction-of-mining-in-the-state-1377059391-1#>

CHAPTER II

LEGAL REGIME:-

Legal researchers do not make systematic research into facts of social, political and economic conditions which give rise to the individual rules, acts or codes. They also examine the socio-legal and other effects of those acts or rules.⁷

Characteristics of Legal Research-

1. The legal research deals with the social and behavioral phenomena. It studies behavior of human beings as members of society, and their feeling responses, attitudes under different circumstances.
2. Legal research is carried on both for discovering new legal facts and verification of the old ones.
3. Legal research tries to establish causal connection between various human activities.⁸

Objectives of Research or Components of research-

Research consists of the following components:

1. Manipulation of things, concepts or symbols- In order to know how things respond to or change under specific conditions, the researcher subjects them to purposeful control. Such purposeful handling is called 'manipulation' which is the aspect of experimentation. The researcher deals not only with things, but also with

⁷Legal Research Methodology - Dr. S.R Myneni

⁸Legal Research Methodology - Dr. S.R Myneni

concepts or symbols.

2. For the purpose of generalizations- Research is undertaken with a defined purpose, the purpose being to arrive at a statement of generality. The net result of a controlled inquiry should be a proposition or a conclusion which tells us to expect something to happen to a class of things when a certain class of conditions is influencing them.
3. To extend, correct or verify knowledge- Generalizations drawn from the study have certain effects for the established body of knowledge. It may add credence to the existing accepted theory or bring certain amendments or modifications in the accepted body of knowledge.
4. The knowledge may be used for construction of a theory or practice of art- The extended, corrected and verified knowledge may be put to two possible uses: theoretical and practical. New knowledge thus acquired may be used for constructing theoretic models.⁹

Every research will have an aim. Its aims may be to discover new facts or verify and test old facts or to develop new scientific tools, concepts and theories.¹⁰

⁹Legal Research Methodology - Dr. S.R Myneni

¹⁰Research Methodology – ShipraAgarwal

Background and History of mining activities in Goa

The first reference to the mineral content in Goa soil dates back to the 16th century. A Dutch traveller by name Mr John H. V. Linschoten had written that in Goa can be found stones containing iron. He has also stated that the scientists have opined that gold and copper would also be available from them. He further adds that, however, the government authorities do not permit the extraction and export of the same. Regarding the position of minerals as it existed then, Fonseca in his book, 'An historical and Archaeological Sketch of the City of Goa' (1878) has to say the following:

"laterite is the stone most abundant throughout the district. Iron is found at bage, Satari, Pernem and specially in the provinces of Zambaulim. Though no other mines or quarries are worked, the above by no means represent all the geological resources of the country, which are very imperfectly known, owing to the soil not having yet been scientifically explored".

The prospecting of iron ore and manganese ore started in Goa as early as 1905. Though the regular export of iron ore from Goa commenced in 1947, it gained momentum in 1949.

Prior to the liberation of the territory, only a few small industrial units existed in the territory. The major economic activity of the district was confined to the mining of iron and manganese ore. The district of Goa is richly endowed with industrial minerals like iron ore, manganese ore, bauxite, lime stone, dolomite etc. In addition to this, there are good deposits of refractory clays, laminite sands, steatite, silica sand, felspar, graphite, talc, quartz, soap stone, etc.

Iron, Manganese, bauxite, high magnesia, limestone and clay are the chief minerals of economic importance found in the district. The estimated indicated reserves of recoverable iron ore is about 58 per cent, iron content is to the order of 405 million tonnes. Similarly reserves of black iron ore and manganese ore (average iron content of 38 per cent) are about six lakh tons and 12 lakh tons respectively. The reserve estimate for washed clay is about 1 to 3 lakh tonnes. Certain clay is suitable for ceramic industry and the rest can be used as refractory material. Aerial surveys have led to the discovery of bauxite and luminous laterite in some northern parts of the district. Huge reserves of bauxite have also been reported in the southern part of Goa.

In the year 1905, a few French and German companies had carried out prospecting of iron and manganese ore in Goa. The outbreak of the first world war brought the mining operations in the district virtually to a stop. However, they were resumed in 1947. It marked the beginning of the development and export of iron and manganese ore. For the purpose of blasting, the use of Ammonium Nitrate was first introduced in Goa in the year 1949, which was thus started much earlier than in the other parts of the country.

The state of Goa is well served by two navigable rivers namely the Mandovi and the Zuari which pass through the iron ore and manganese ore bearing areas and join the sea near Mormogoa harbour. This inland waterway system is considered a boon to the mining industry in Goa. It not only facilitates the speedy movement of mineral ore from the interior to the port but also helps in reducing the cost of transportation of the ore. These two rivers with the Cumbarjua canal provide facilities for cheap transport by barge of mineral ore from respective mines to the harbour where the ore is loaded on ships for

export. The bigger mines are operated partly mechanically and partly manually. Out of the 654 mines in operations, about 300 were working as on January 1974.

It may be pointed mining in Goa has developed under the control and guidance of the mining department. Even though prospecting of iron and manganese started in Goa as early as 1905, it was only in year 1941 that a sample consignment of 1000 tons of iron ore was made to Belgium. Regular export of iron ore in Goa was started only in 1947 and most of it was exported to Japan. The speedy development of mining activity in Goa has to be attributed to very liberal policy in respect of granting of concession and also due to low taxation of minerals and nominal import duty on mining machinery.

Under the mines and mineral (regulation and development) Act 1957, 260 certificates of approval, 20 prospecting licences and 36 mining leases were granted by the end of May 1970.

Transport of ore from mines to jetties is done by road in rear dumpers from the distances ranging from 5 kms to 50 kms. in one case a rope way of 3.8 kms in length is used. It transports about 1 million tons of iron ore per year. All the iron and ferro manganese ore produced in Goa is exported to Japan and some European countries. Foreign exchange earnings by way of this export are in the order of Rs 30 crores. Manganese ore of high grade is either utilized locally or dispatched to the neighbouring states.

Bauxite is partly exported and partly despatched to other states for local usage. That has been a good foreign demand for the goan bauxite above the grade of 54 per cent A 120. Bauxite was first exported in the year in 1969. The total export being to the tune of 33,

600 tonnes.

The export trade is channelled through private exporters as well as the minerals and metals trading corporation of India limited, a government of India undertaking.

Exports to the East European countries is handled by MMTC. All the private exporters owned captive mines, the production from which accounts for 30 per cent to 90 per cent of their commitments. They meet rest of their requirements from small mine owners. In the recent years the export of Iron ore fines is on the increase.¹¹

¹¹ <https://www.google.co.in/#q=mining+in+goa>

CHAPTER 3

MAJOR STEPS INVOLVED IN DOING LEGAL RESEARCH:-

1. **Formulation of problem-** At the outset the researcher has to decide the area or aspect of a subject-matter in which he is interested. It is more difficult to find and formulate a problem than to solve it. A problem can be called a legal research problem only when it satisfies the following conditions:
 - a) The problem must be worth studying.
 - b) It must have a social and legal relevance.
 - c) There must be facts needed for research.
 - d) It must come out with practical solutions to the issues.
 - e) It must be up to date with the current social or legal happenings.
 - f) It must involve clarity of meaning and limited scope of study.
 - f) It must be explicit and original.
 - g) It must be verifiable and testable.¹²

The research study have to be conducted in the mining and non-mining regions of south Goa (sanguem and quepem *talukas*) and Dharbandoda, sattari,Bicholim, ponda taluka in north goa and few villages in these regions have to be selected randomly by the investigator.

Peoples should be selected for the study, are from similar socio-economic background.

Field notes from observations and interviews with community people and peoples from

¹²Legal Research Methodology - Dr. S.R Myneni

the mining region, which will help to create a picture and can study the impacts of mining closure on their life. Kaurem- pirla, maina, zambaulim, sanvordem, and collem villages from (sanguem and quepem taluka) and some other villages have to be selected for study of rural people living in the mining regions of Goa to study the adverse impact of closure of mining on their families.

In all these villages iron ore mining activity has been existing for more than 50 years. These mines operate all through the year except during heavy monsoons. Men are mainly dependent on mining activity for their source of livelihood. Migrant women procure jobs as mining labourers like carrying mine mud, sweeping, and spraying water.

2. **Formulation of Hypothesis-** The suggested explanation or solutions to the problem formulated as propositions are called hypothesis. The hypothesis may be the solution to the problem. Hypothesis provides direction to research. It directs an investigator to identify the procedures and methods to be followed in solving the problem. The hypothesis is forward looking. It may be statement of relationship or it may specify the functions.¹³

Definitions of Hypothesis:-

The Webster's New International Dictionary gives the meaning of the term 'hypothesis as "a proposition, condition or principle which is assumed, perhaps

¹³Legal Research Methodology - Dr. S.R Myneni

without belief, in order to draw out its logical consequences and by this method to test its accord with facts which are known or may be defined.¹⁴

According to Werkmeister, “The guesses he makes are the hypothesis which either solve the problems or guide him in further investigation.”¹⁵

Construction of hypothesis is the second important consideration in the formulation of a research problem.

Meaning of hypothesis

Hypo means less than or under, and thesis means idea or general opinion to be defended by a person and thus hypothesis means an idea formed beforehand which has less value than the generally formed view.¹⁶

the Webster new international dictionary gives the meaning of the term hypothesis as a proposition condition or principles which is assumed, perhaps without belief, in order to draw out its logical consequences and by this method its accord with facts which are known or may be defined.¹⁷

Characteristic or qualities of a useful or workable hypothesis.

goode and hatt suggest the following characteristic of a useful hypothesis:

- 1) the hypothesis should not be too vague or general. it should be specific.
- 2) the hypothesis should be properly explained and conceptually clear.

¹⁴Legal Research Methodology - Dr. S.R Myneni

¹⁵Research Methodology – ShipraAgarwal

¹⁶Legal Research Methodology - Dr. S.R Myneni

¹⁷Legal Research Methodology - Dr. S.R Myneni

- 3) the hypothesis should be capable of being verified and have to take into consideration the technique of study that is available.
- 4) the hypothesis should be as can be put to empirical test. empirical test is the basis of objectivity.
- 5) hypothesis should be continuation with theory already involved.
- 6) it should be simple. P.V.Young says- the more insight the researcher has into the problem the simple will be his hypothesis.
- 7) it should be non contradictory one.
- 8) it should be closest to the things observed.¹⁸

Environment clearance suspended 99 Mines in Goa

The environment clearance of 99 Mines of Goa was suspended with respect to the report presented by the Justice M B Shah Commission on 12 September 2012. Report claims that the organizations involved in the mining work taunted with the forest laws and environment norms & guidelines. This report also suggests the involvement of state directorate of mines, the union ministry for environment and forests (MoEF), Indian Bureau of Mines (IBM), the state forest department and the Goa State Pollution Control Board (GSPCB) in this act of illegal mining.¹⁹

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¹⁹ . <http://www.jagranjosh.com/current-affairs/environment-clearance-of-99-mines-in-go-a-suspended-1347533370-1#>
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This was the first step taken by the union ministry to suspend the illegal mining activities in Goa. There were irregularities in the department and most of the politicians were involved in the illegality.

Supreme Court of India Banned Mining Activities

Subsequently The Supreme Court of India on 5 October 2012 banned until further orders on all mining operations, in all 90 mines which also includes transportation of mined iron ore and manganese in leases, in Goa.

The failure of the State government of Goa to control illegal mining has led to large-scale destruction of both forest land and non-forest land and had adversely affected the livelihood of local people, especially the rural poor.

The Goa Foundation pointed out that the Justice M.B. Shah commission, appointed in November 2010, said illegal activities in mining had been going on in the State since 2000. All 90 mines were functioning without the mandatory permission from the National Board for Wildlife and 33 of them were located within 1.5 km of wildlife sanctuaries.²⁰

Nearly 93000 people used to work in mining activities along with other thousands of peoples were directly and indirectly dependent on the mining business. the sudden

²⁰ <http://www.jagranjosh.com/current-affairs/supreme-court-of-india-banned-mining-activities-in-go-1349520104-1#>

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closure of mining activities in the state of Goa leads to major problem in the society like Poverty, unemployment, decline of economy etc.

Mining within 1 km of National Parks and Sanctuaries in Goa banned

The Union Ministry of Environment and Forests on 24 October 2013 banned mining within one kilometer area of the national parks and sanctuaries of Goa, anymore. The decision was taken to take the state one step closer to restart iron ore excavation mining in a regulated style. The issued order was released to resolve the issues that require a solution to restart regulated mining in Goa.

As per the order the area up to one kilometer beyond the boundaries of the National Parks and Sanctuaries in Goa can be declared as the Ecologically Sensitive Zone under the Environment (Protection) Act, 1986 and mining activities can be banned as per the Act.

these was an important decision taken by the union ministry in order to protect our environment and to protect and preserve our forest and wildlife santuries.

Mining activities in Goa are mostly carried out near wild life centuries and reserved forest where as the supreme court order to ban the activities of mining within one km where as in other states then Goa it is 10 km.

PROBLEM OF MINING BAN IN GOA

A ban on mining introduced in October 2012 following an inquiry that highlighted illegal mining in the state is expected to have a cascading effect on Goa's economy. With iron ore mining the second-largest contributor to the state's economy after tourism, thousands of Goans fear for their livelihoods.

But officials, environmentalists and even some mining companies say mining in Goa has become a "rogue industry" that has spiralled out of control and desperately needs to be brought into check.

"When mining stops, it is very difficult for the people in the state, who are very much dependent on mining,". "They won't get any source of income." About 90 per cent of the people in mining constituency are directly or indirectly dependent on mining revenues, including mine workers, drivers and shopkeepers. Mining activity is limited during the monsoon season but business normally fully resumes by the end of September or the beginning of October. Mines across the eastern mining belt of Goa are currently deserted, with machinery covered in tarpaulins and barges that normally ferry Goa's workers or transport iron ore tied up at the jetties.

"What happened for the last five years is that there was no control in the mining in the state,". we all blames the previous state government. "The material was exported without paying the royalties and in so many cases [illegal operators] are digging from other places. Illegal mining boomed in Goa."

Ninety mines were officially operational in Goa last year, the country's largest exporter of iron ore and its second-biggest producer of the material, with demand largely fuelled by China. Last year, 9.38 billion rupees were generated in duties the state from iron ore.

According to the Shah Commission report on Goa's mining industry, operators going beyond their boundaries and "unregulated" and "unrestricted" illegal mining have resulted in 350bn rupees of losses to the state, as well as environmental destruction.

65% of Goans are affected due to mining ban and closure has caused losses to the public

The closure of mining has caused widespread unemployment among the communities in Goa –. the vexed issue of mining and its impact on people's lives, it is found that an overwhelming number of people also agreeing to the fact that the mining closure may have caused significant drop in the state's revenues. Though the difference in people's perception between mining closure affecting unemployment and its impact on revenue differs, the fact remains that the state's biggest source of revenue shutting down has impacted lives and which also leads to poverty.

Significantly, over half of South Goa has agreed to the fact that mining closure has resulted in loss of employment and unemployment.

However, the poor have felt the biggest of pinch as the results of the closure of mining. Over 60 percent of those earning below Rs 5000 per month felt that mining closure had caused major unemployment problem. Similarly, almost half of the lower middle class population falling in the NCCS C class population felt that the closure has caused unemployment.

Revenue wise, Goa's population was evenly balanced in its opinion whether mining closure had indeed caused loss of revenue with a significant number of Urban Population agreeing that the closure did cause loss of revenue.

Overall, almost 80 percent of the population had felt that mining closure had affected the livelihood of not only the workers but also those who were in some way connected with mining. The impact of mining closure on the Goans was across the state.

Suffering of people due to ban on mining activities

Mining dependent people are worried about their future. Most of the miner has not worked for more than a year after iron ore mining was banned in the Indian state of Goa.

“Some people are worried about when work will start,” some of them have two to three children. “It should start, otherwise it will be a big problem for them and their families. What they will do after this?”

“It's an uncertainty that has fallen on them. If the company stops paying tomorrow, what they will do? they are tense. they don't have any alternative.”

A battle is raging in India's Supreme Court over an illegal mining case, filed by the Goa Foundation, an environmental non-governmental organisation, which alleges that “more than a decade of senseless extraction and looting [has] irreversibly brutalised the natural environment” in the state.

Few are one of the more fortunate miners because they are still being paid by their company. Many others have lost their livelihoods because of the ban.

“Around 93,000 workers have lost their jobs,” “Only about 13,000 are being paid a salary. We’re passing through a very difficult phase in the economy of the state and also the lives of the people.”

The state has lost 35 per cent of its revenues since the ban, while the loss of foreign-exchange earnings that would have been generated for the country only widens the current account deficit.

Barges to transport ore and thousands of trucks have been idle in Goa since the mining ban took effect. A state government benefits scheme is offering some affected parties, such as truck owners, some relief, but it is proving to be a drain on government coffers.

“The state is short of funds and how long can they do it?” this is major problem in the state.....

“The barge owners and the truck owners have to pay loans. Even the machinery owners who borrowed from the banks are not able to pay back [their loans].

“The banks are facing non-performing assets and they are not able to recover the money because there is a valid reason – there is no business.”

“The government and the entire state are dependent on two major planks of the economy – mining and tourism. .

There is need to have a mining business in Goa again, in order to solve the problem of unemployment and poverty in the state. there is no other source of earning to the people living in the mining regions. but there should not be any illegality in the business.

“Having totally neglected our agriculture, our industry, in our view, mining should start with sufficient checks and balances and there should be sustainable development in the state.

- 3. Analysis of Concepts-** The researcher needs to define the concepts which would be used in organizing the data. Such definitions include formal definitions that are designed to convey the general nature of the process. He has to translate them into observable events. Webster defines concept as a generalized term for a class of objects, an abstraction from reality that allows us to refer to reality. McClelland describes it as, ‘a shorthand representation of a variety of facts.’²¹

Mining activities were prevalent in Goa from last 100 years, especially in a small state like Goa mining activities were became an important source of income to large number of people. Even there were several ill effects of mining in Goa, people used to suffer in order to have a good source of income.

Since October 2012, people in mining regions are suffering very badly due to sudden closure of mining activities as same leads to problem in the society.

In order to have sustainable development there should be proper rules and regulations for the mining activities and the authorities should keep regular check on the functioning of the mining activities.

- 4. Research Design-** After formulation of the research problem, the researcher has to work out a design for the study. A research design is a plan comprising the

²¹ Legal Research Methodology - Dr. S.R Myneni

researcher's decisions about the procedures of sampling, data collection and analysis of data in respect of a given study, which aim to fulfill the objects of the study. Research is must for any research problem since it helps to carry out the various research operations very smoothly. there by making research as effiecnt as possible by giving maximum information by economizing or minimizing time, energy and cost.

the process of working out a research design involves, making decisions about the techniques to be employed for collection of relevant data, the safeguards to be employed to safeguard the validity, reliability and precision the mode of drawing the sample, analyzing the data, interpreting the results.

According to the Pauline V.Young “ A research design is a plan of action, a plan for collecting and analyzing the data in an economic, efficient and relevant manner.”²²

CONTENTS AND IMPORTANT FEATURS OF RESEARCH DESIGN

A research design includes the following points²³

- 1) title of the topic and determination of its scope
- 2) Background knowledge and introduction of the problem
- 3) Nature of study description, explanatory or experimental
- 4) description of short term and long term objectives
- 5) making of hypothesis and using of appropriation concepts and variables

²² legal research methodology-Dr.S.R.Myneni

²³ legal research methodology-Dr.S.R.Myneni

- 6) basis of data collection and appropriate tools and techniques
- 7) approximate time schedule for research
- 8) awareness regarding context
- 9) analysis and interpretation o data collected, along with decision regarding the problem of generality and validity
- 10) nature and amount of resource at one's disposal.

STEPS AND PROCEDURE OF A RESEARCH DEIGN

A study design includes the following components parts which are inter-dependant and not mutually exclusive.

- 1) sources of intimation
 - a) documentary sources
 - b) personal sources
 - c) library sources
- 2) nature of study
- 3) objectives of study
- 4) socio-cultural context of study
- 5) Geographical area to be covered by the atudy
- 6) period of time to be encompassed
- 7) the basis of selecting the data
- 8) definition of terms
- 9) working or exploratory hypothesis
- 10) technique to study

Research of different problems due to closure of mining and other mining related issues like

- 1) unemployment
- 2) poverty
- 3) environmental pollution
- 4) dumps
- 5) sludge

5. Collection of data- After designing the research assignment, the researcher turns to the implementation part of it. He attends to the formulation of the instruments such as the questionnaire, interview schedule, etc. keeping in view the techniques of analysis he is going to implement.²⁴

METHODS OF COLLECTING DATA

- 1) Observation method

observation is a method that employs vision as the main means of data collection. it implies the use of eyes rather than of ears and voice. it is accurate watching and noting of phenomena as they occur with regard to the cause and effect or mutual relations.

- 2) Interview method

the interview method is the oldest and most often used device for obtaining information among human beings.

²⁴ Legal Research Methodology - Dr. S.R Myneni

types of interview methods are

- 1) structured interview- the interview is based on the pre-determined question and standardized techniques is called structured interview
- 2) unstructured interview- it is based on flexible and non-pre-determined questions. it involves relatively much lesser standardized or relevant techniques and operation.
- 3) Focused interview-in this method, the objective is to focus attention on the given experience of the respondent and its possible effects.
- 4) Repetitive interview-some social changes influence the behavior of thye people. to know the effect of such factors in the time sequence, repetitive interview have to be conducted.
- 5) the clinical interview- the type of interview is similar to be focused interview. the clinical interview is concerned with broad underlying feelings or motivations or with the cause of individuals life experience.
- 6) the non-directive interview- the initiative is more of less completely in the hand of the respondent.
- 7) the depth interview- the depth interview is generally a lengthy procedure designed to encourage free expression of effectively charged information.

3) Mailed questionnaire method

this method is one of the most suitable method in research problem.

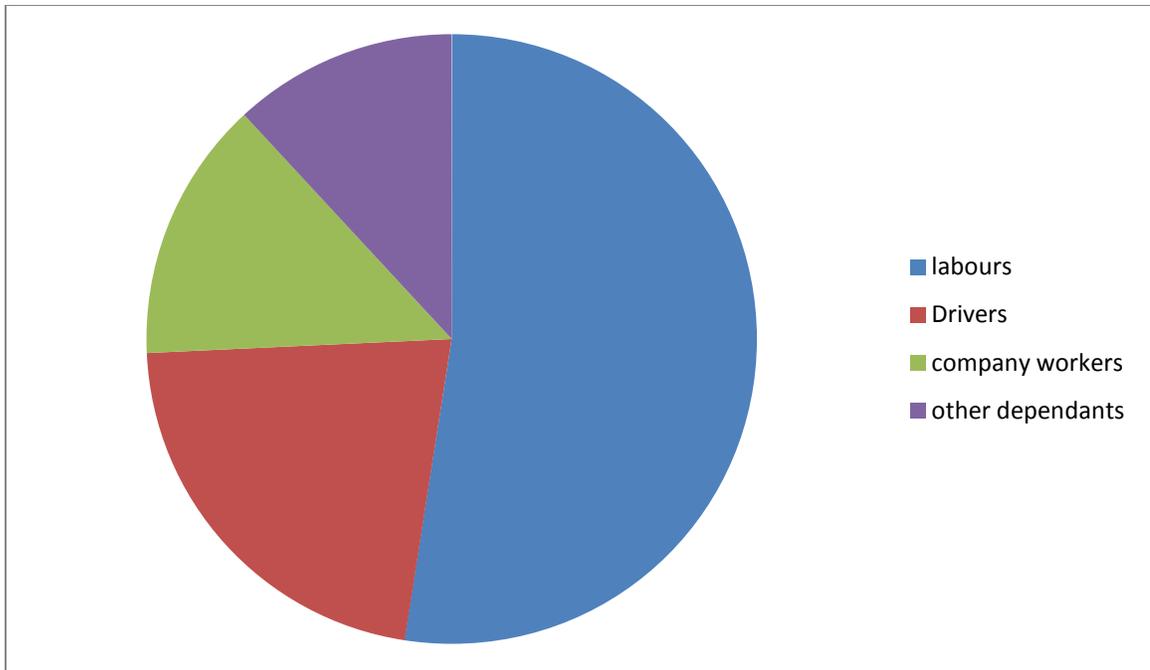
questionnaire is a list of question to be answered by a group of people,

especially to get facts or information about their views. this method is admissible among literates only.²⁵

In order to get the best information from the people who are really suffering from the mining related activities and also due to closure of mining, the observation method are important as a investigator can personally involve himself and see the conditions and situations of the people by observing. while speaking about interview methods too, they are best methods to get the first hand information from the people by interviewing them personally.

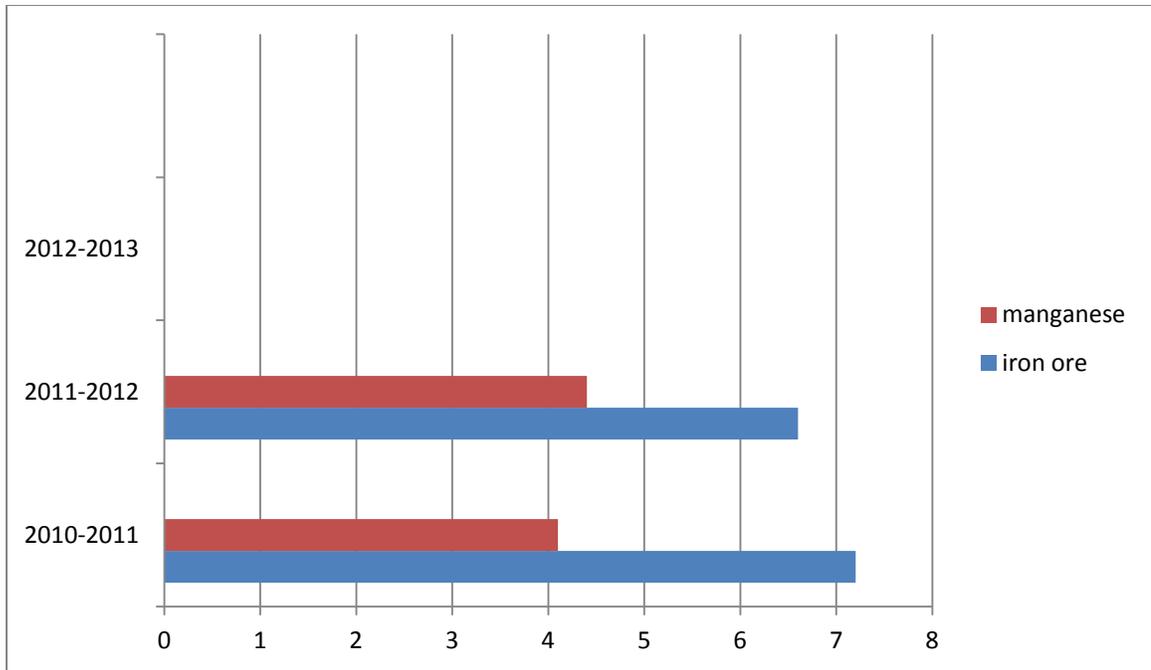
6. Data analysis-The purpose of data-analysis is to summarise the completed observations in such a way that they yield answers to the research questions. The analysis consists of specific sub-tasks such as coding, tabulation and drawing of statistical inferences etc.

²⁵ Legal Research Methodology - Dr. S.R Myneni



Analysis of data collected and study with the help of pie chart will help to understand the concept easily. here we can see the peoples who are affected due to sudden closure of mining activities. three parts includes Labourers, truck drivers, machine operator, and company workers including office assistant and officers are affected and lost their jobs.

whereas purple color shows other dependants who are affected due to ban on mining activities. for eg. shop owners, hotels, restaurants, tyre shops, etc.



here bar graph explains the production of mining ores and transportation in previous three years. which will help to see the decline of production and transportation in the state due to ban on mining activities from last October 2012.

7. Conclusions and Suggestions

In this stage the hypothesis is compared with the conclusions drawn on the basis of data. In case a hypothesis fits the findings, the theory which suggested the hypothesis would be proved. If the hypothesis is disproved the blow of disproof will pass on to the theory which originated the hypothesis.

To conclude my topic, The Goa government has suspended iron ore mining in the state on the recommendation of the Justice Shah committee, constituted to probe the allegations of mining irregularities.

Therefore, we believe the impact of mining ban in Goa will be different from that in Karnataka as 93000 people are unemployed due to closure of mining and also all mining dependant people are facing problem, where as domestic steel production would be largely unaffected by this. Indeed, seeing the global iron ore scenario, we believe the event could help to provide temporary support to global iron ore prices which in turn may help steel prices.

Goa has a total GDP of nearly \$6.5 billion and iron ore exports tend to contribute nearly 50% of it. At the same time, the ban has been imposed by the current government which will be affected more by popular sentiment (which supports mining).

In principle, the areas or resources affected by mining should be returned to a safe and productive condition through rehabilitation, which may or may not involve a return to pre-mining conditions and reclamation should be an ongoing activity throughout the life of

the operation as well as after decommissioning. the mining industry, the government and the local people must work together to care for future generations. there is also a need for better planning of reclamation or restoration system to bring back the derelict land in short time for use. it takes time, money, and certain degree of geological good fortune to transform disturbed mined land in to a park, forest, lakeside, farmland, or further industrial development etc. sometimes, land value and material may not support the mining project for land reclamation since the cost of reclamation may be very high. hence constant research and development efforts are required to find out newer and latest technologies and methodology to reclaim the land for better use since economic development must have respect for environmental integrity.

the role of mining in sustainable development is one issue that decision makers and resource managers have wrestled with for decades. mining is one of those activities that really connect issues relating to people, development and the environment. the impact of mining on health, land, water, air, plants, and animals and other aspects of society can be reduced by careful planning and implementation of mining activities. it is essential to strike a balance between mineral development on the hand and the restoration of the environment on the other.

today there is widespread consensus among all people including those from the mining industries, truck associations, political and civil society that illegal mining should not be permitted and only sustainable legal mining be supported.

however the extent of illegal mining is so vast that there are reasonable apprehensions that significant sections of mining industry will have to shut down after all the reports of the investigation agencies are decided by the supreme court.

it is true that mining activities in Goa has resulted for the damage to the environment and loss of the livelihoods. but closure of mining made people of mining areas difficult to live as all the earning source is struck. All sections including miners, owners, workers, drivers, and all other mining dependant pople are facing financial crises due to sudden closure of mining activities in the state.

There are some suggestions like,

- 1) when there is problem in society due to mining closure at the same time the government should try to divert peoples into other fields like agriculture, horticulture, grazing, animal husbandry, because mining activities are non-renewable and will not last long.
- 2) There are a number of ways to reduce the environmental impacts of mining,in order to have a sustainable development and protection of environment including:
 1. Reducing the consumption of minerals.
 2. Substitution of other materials and processes with more environmentally friendly materials and processes
 3. Legislation and regulations to reduce environmental impacts can be enacted and enforced
 4. Cleaning up abandoned mine sites

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