IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Environmental And Health Effects Of Clay Mining At Pazhayangadi, Kannur District, Kerala

[1]Dr. Divya Karikkan, [2] Sajeema. K. A

[1] Assistant Professor, [2] Post graduated student

Department of Economics

Kannur University, Dr. Janaki Ammal Campus, Palayad, Thalassery, Kannur, Kerala, India-670661

ABSTRACT

The Keralan government is the owner of Kerala Clays and Ceramics Products Ltd. It contains China Clay mines in Payangadi, Kannapuram, and Nileshwar that are useful for ceramics, rubber, pesticides, and ultramarine. The state is experiencing a number of environmental effects as a result of unchecked mining. Additionally, it has detrimental effects on health and water quality. What the authorities have described as promising mining potential could spell tragedy for the people, they think. During the summer, the village's sole supply of drinking water comes from Madayipara's water outflow. The incursion of salty seawater into the village's groundwater will devastate Madayi if Madayipara is demolished. "In reality, the plateau operates as a very crucial watershed for the surrounding region". Streams in the surrounding area have also been transformed into death traps for the fish that live there due to the chemicals generated from the garbage dissolving in the rainwater and seeping into the ground water. In order to paint a clear picture of the suffering endured by the indigenous people as a result of clay mining in the Pazhayangadi area, the current study, ENVIRONMENTAL AND HEALTH EFFECTS OF CLAY MINING AT PAZHAYANGADI, was conducted.

Key words: clay mining, china clay, types, Kerala, environment

I INTRODUCTION

Ceramics, refractory, paper coating, filler for rubber, insecticides, cement, paint, textiles, fertilizers, and other products like fiberglass, asbestos products, chemicals, cosmetics, pharmaceuticals, electrical ware, glass, and foundry are just a few of the many applications for China clay (Kaolin), one of the most sophisticated industrial minerals. It is mainly made up of Kaolinite. China clay is the result of kaolinization, the process by which hydrothermal action wears down the feldspar in granite to produce kaolinite. When the china clay is extracted, the other significant minerals in granite, mica, and quartz—which are not altered during kaolinization—become waste products. Kaolinite is responsible for the fineness and whiteness of china clay. Particle heterogeneity affects china clay's strength, color, and fluidity. Other qualities include its chemical

inertness and absence of course contaminants. Deposits of China clay are typically found up to 100 meters below the surface.

China clay has traditionally been removed via hydraulic mining, however dry mining is now also utilized. The overlaying rock is removed to expose the rock that contains clay underneath. In hydraulic mining, the minerals, including china clay, are dislodged by directing a high-pressure flow at the pit face. The resulting slurry is then filtered to remove the finer sand grains. The remaining clay is then polished. Mechanical excavation is used to remove dry mining clay and associated debris, which is then filtered and broken up with hydraulic jets.

The final product, which might be sold as pellets or powder, is obtained by filtering and drying the liquid clay using thermal driers to reduce its water content after the bigger particles have been pipetted out of the clay slurry and sent to settling tanks. 90% of the material that is quarried comes from the substantial amount of trash produced throughout the production process. The sand and shattered rock that are present within and on top of the clay reserves are an important source of secondary aggregates.

Its inertness, whiteness, and small particle size—all of which may be altered—make China clay important. The paper industry primarily uses it as a white pigment and finisher to give paper its smooth, slightly glossy appearance. In the paper's actual structure, it is also used as filler. Like ball clay, it is frequently used in ceramics as a whitening agent for electrical porcelain, glazes, and tableware and sanitary ware. It is utilized as a "performance mineral" in toothpaste, paints, rubber, plastics, white cements, and sealants, and it is also utilized in pharmaceuticals.

As the international economy grows, the United States has the biggest demand for metals and minerals worldwide. Although most of the extractions occur in the developing world, the majority of the products are used in the industrialized world. The mountains and highlands of several Latin American countries have become especially attractive due to rich reserves, the onset of relative political stability, the opening of mining to international firms in the 1990s, and large tracts of unexplored country. Developed countries are the biggest importers of minerals and metals. Often, they have depleted their own resources or decreased mining.

The International Labour Organization's (ILO) Convention on the Atmospheric Effects of Pollution and Safety and Health in Mines has laid the groundwork for national efforts to improve working conditions in the mining industry. The mining and processing of metals and minerals linked to global warming may have detrimental environmental effects on both highlands and lowlands. Furthermore, because mountain ecosystems are so fragile, it can be difficult, if not impossible, to stop the degradation of mountain environments. The biggest environmental degradation problems linked to mining are damage to water quality and quantity, loss of vegetation and biodiversity, and the visible impacts of mine, such as trenches, open pits, slag heaps, surface dumps, and valley fills. Before mining can start, vegetation and trees must be cut down. In isolated highland areas, trees are sometimes felled to provide smelting fuel.

Massive volumes of trash may remain after mining is completed. Since most of our water for drinking and agricultural irrigation comes from mountains, it can be especially hazardous when waste from mountain mines contaminates water. Pumped or drained mine water is often very acidic and tainted with heavy metals and other pollutants. Rivers around the world have been deemed biologically dead as a result of the production of acid from the rock and the release of dangerous materials into their waters. In many hilly regions of Africa, where mines are located, the levels of arsenic in the water are 1,000 times greater than the commonly accepted limits. Air pollution is another effect of mining. Dust from blasting, haul roads, and crushing during processing can all be released by surface mines. While acid runoff from waste rock is a frequent result of mining, acid rain may be connected to the smelting of metals.

With over 88% of its production exported, the UK is currently the world's third-largest supplier of china clay, making Devon's production important both domestically and abroad. China clay has significant markets in Asia, Western Europe, and the United Kingdom. Devon and Cornwall's local economies are thought to benefit from the china clay industry to the tune of about £150 million annually. China clay is only found in the South West of England in the United Kingdom due to the special qualities of the region's abundant granite. This granite is part of the enormous subterranean batholiths, which are molten rock domes that resemble balloons and formed the area's high moors. Although it has been exploited elsewhere in the past, china clay can

be found in Devon at Lee Moor Quarry on the southwest edge of Dartmoor. Large reserves can also be found in Cornwall's St Austell region.

The states of Pahang, Selangor, Terengganu, Kelantan, Perak, Kedah, Pulau Pinang, Negeri Sembilan, Johore, and Sarawak are home to clay deposits. Clay production rose from 25,081,174 tonnes in 2006 to 28,292,423 tonnes in 2007.There are numerous businesses in Malaysia that provide a wide variety of clays. Ball clays are supplied by RADIANT PROVINCE. The biggest producer of high-quality burnt clay goods in Malaysia is CLAYBRICKS & TILES SDN BHD. The cutting-edge facility in Kota Tinggi, Johor, can create a wide range of burnt clay products, including utility and accessory bricks, pavers, brick veneer, and facing bricks.

The items come in a wide range of colors and textures, including white, cream, grey, terracotta, brown, lavender, wire-cut, cobble, tumble, rock face, bark face, smooth face, and many more combinations. CMS Cement, one of the main companies of the Cahya Mata Sarawak Group since 1974, today has the unique status of an integrated cement manufacturer with smooth delivery made possible by direct access to raw materials through quarry operations and clinker manufacturing.

Numerous mineral occurrences and deposits can be found in Kerala state, including: Gold, Iron ore, Bauxite, Graphite, China Clay, Fire Clay, Tile and Brick Clay, Silica Sand, Lignite, Limestone, Lime shell, Dimension Stone (Granite), Gemstones, Magnetite, Steatite, and Heavy Mineral Sands (Ilmenite, Rutile, Zircon, Monazite, Sillimanite). Large-scale mining operations, however, are mostly limited to a few number of minerals: China Clay, Heavy Mineral Sands, and, to a lesser degree, Granite, Silica Sand, and Limestone/Lime Shell. In actuality, China Clay and heavy mineral sand account for over 90% of the state's overall mineral production value.

Through previous research campaigns in various parts of Kerala, the Department of Mining and Geology has identified two major China Clay zones: the northern China Clay zone, which stretches from Kannapuram Madayi-Cheruthazham in Kannur district to Nileswarm-Manjeshwaram in Kasargod district, and the southern China Clay zone, which stretches between Thiruvananthapuram and Kundara (Thiruvananthapuram and Kollam districts). China clay of sedimentary and residual origin has been assessed to have a resource of 172 million tonnes (a likely reserve of 80 million tonnes and a potential reserve of 92 million tonnes).

Kerala china clay is of world-class quality and is among the best. Actually, compared to foreign clays, the kaolin sold by English Indian Clays Ltd. (EICL), Thiruvananthapuram, is said to offer comparable or superior qualities.Kerala Ceramics Ltd. in Kundara and English Indian Clays Ltd. in Thiruvananthapuram create the paper coating grade china clay. Kerala Clays and Ceramic Products Ltd. (KCCP) produces ceramic grade, high quality china clay from its mines in Pudukai, Kasargod District, and Kannapuram and Pazhayangadi, Kannur District.

Together, the 25 active china clay mines in Kerala—17 in Thiruvananthapuram, 4 in Kollam, and 2 in each of the districts of Kannur and Kasargod—produced 4,47,000 tonnes in the fiscal year 2000–01. Kerala contributes over 58% of the nation's output, earning it a major spot on the country's polished clay map. Kerala has yet to establish itself as a leader in the export of china clay, despite being the world's largest supplier of high-grade processed china clay, having a vast amount of export potential, and having quite decent infrastructure, including ports, roads, and train linkages. The output of processed clay increased just threefold over the last 20 years, despite a fourfold increase in R.O.M., or raw clay, production.

BALLCLAY

Certain regions in the districts of Kollam, Alappuzha, Ernakulam, Thrissur, and Kannur are reported to have ball clay, with an estimated resource of 5.67 million tonnes. Even if it does not meet ball clay specifications, it is nevertheless regarded as a good alternative. There is not any commercial production at the moment.

FIRECLAY

Fire clays are found primarily in the districts of Alapuzha, Ernakulam Kollam, and Kannur. They are associated with Tertiary sediments in the coastal plain, and their estimated reserve is 11.50 million tonnes. But this resource is just waiting to be used.

BRICK CLAY AND TILE

Typically, the clays used for brick and tile are of inferior quality and burn red. The two most important requirements are that they burn hard at low temperatures and mold easily. Throughout the state, there are over 5000 brick kilns and 400 tile companies that produce bricks and tiles. This industry in the state uses the abundant alluvial clay deposits found in valley fill areas and paddy fields. The districts of Thrissur, Kozhikode, Ernakulam, Kollam, Thiruvananthapuram, Kannur, and Palakkad are the main locations for clays needed to make tiles.

Lacustrine and floodplain clays are the two primary varieties of tile and brick clays found in the state. The former are limited to the district of Kannur. Clays are typically found in the laterite depressions close to Pattuvam, Alakode, Thaliparamba, and other locations. They range in color from fine plastic to dull white to variegated. In certain districts, you can find the flood plain deposits that are located near rivers.

The Feroke area of Kozhikode district, Amballur, Ollur of Thrissur district, Aluva of Ernakulam district, Chathannur of Kollam district, and Amaravila of Thiruvananthapuram district are the primary locations in the state where tile production facilities are concentrated.

The following regions have had exploratory drilling for china clay by the Department of Mining and Geology. In relation to the execution of plan schemes, a thorough examination of china clay was carried out in the districts of Kollam, Kannur, and Kasaragod during the 2009–10 academic year. Bore hole No. 15 has been drilled in the Kollam district. Exploratory drilling was carried out in the Pazhayangadi area and Kannapuram village in the Kannur district. A total of 85 hectares in Peringome village, Thaliparamba taluk, have been designated for in-depth examination. In the Kasaragod district, reconnaissance surveys were carried out to locate china clay in the Vallakkode area, and exploratory drilling was carried out in the Kommangal Padavu, Erikkulam, and Menamkottupara-Kothottupara, Nileswaram areas.

The taluks of Thaliparamba and Kannur in the Kannur district are rich in China clay. The district does not make full use of these resources. Rich clay resources may be found throughout the district, and different kinds are mined for the ceramics, tile, and pottery industries. The most significant locations for clay discoveries are Karivellore, Pattuvam, Korom, and Perumba. Around Pilathara and Thaliparamba, good quality kaolin can be found beneath the laterite capping.The coastal regions are home to several tile manufacturing facilities. There is a lot of room for the growth of clay-based enterprises in the district because clay is so readily available.

The Keralan government owns Kerala Clays & Ceramics Products Ltd. It contains China Clay mines in Payangadi, Kannapuram, and Nileshwar that are useful for ceramics, rubber, pesticides, and ultramarine. It also has a refractory and production manufacturing unit at Mangattuparamba a wire cut brick making unit at Kannapuram in Kannur district and an Aluminous Laterite mine at Karindalam in Kasaragod District.

Madayipara is a region situated approximately 25 kilometers from Kannur, 30 meters above sea level, and part of a 365-ha laterite plateau. An estimated 5.5 million tonnes (mt) of lignite and 29 mt of China clay are thought to be present in the Madayipara region. For 20 years, this resource might be extracted. The residents of Madayi, a panchayat with 13 wards and a population of over 38,000, have chosen not to permit mining at Madayipara because the authorities appear intent on carrying out their plans for mining in the region. What the authorities have described as promising mining potential could spell tragedy for the people, they think. The entire hamlet depends on this plateau for survival.

Due to the destructive operations of a mining firm operating next to the temple and the pound, the hillock's structural stability and natural beauty have been seriously threatened for the past few years. The company's activities include exposing China Clay deposits that were left beneath the hill after using advanced

machinery to pillage the rock's interior and even using high-power explosives to crush each section of the rock down to sea level before commercially exporting the mineral substance. The tremors that occur in the premising locations when explosives are fired may result in damage to temple structures and the destruction of water supplies that are located in the midst of rocky layers that provide the perennial supply of pure water is coming to the surface of Vadukunda Lake. The present mining activities are carries out only 70 to 100 meters away from the temple and pound in the southwest side of the hill.

By any means necessary, the mining business has been able to secure a license from Kerala's geological departments to mine china clay, even extending to the temple's courtyard. When granting a mining license in 1981, the Kerala government's director of mining and geology did not even bother to verify that the company's possession rights and paperwork were legitimate. Formerly a private enterprise, the mining firm is currently a holding corporation under the public sector. However, the current management, devoid of any sense of duty to the populace, is seriously damaging the environment by causing air and water pollution, ecological imbalance in the village, and extensive agricultural land devastation through their destructive mining operations.

The Kerala Clays and Ceramics Productions Limited (kccpl), a state government-owned enterprise, began mining China clay from an eight-ha site in the western portion of Madayipara in 1992, which sparked unrest among the Madayi people. According to G Vilson, whose 0.75-ha plot of cultivated land was left barren as a result of the mining, "approximately 40.5 ha of cultivated land and nearly 100 bore wells from the vicinity of that mine have been made useless due to the pollution produced by it." "Pollutants emitted from the garbage seeped into the ground water, and heaps of waste dissolved in the rainwater," he continues. Additionally, nearby streams have been transformed into a death trap for the fishes in them.

II STATEMENT OF THE RESEARCH PROBLEM

The socioeconomic and environmental conditions of the midlands and lowlands of Kerala state are severely harmed by the careless mining of clay-rich top soil and other wetland systems for the manufacture of bricks, tiles, and other clay products. Air and water pollution, reduced agricultural productivity, loss of fertile topsoil, deteriorated water quality, lowered water tables in residential wells near mining sites, especially during the summer, and the development of fallow land and water-logged areas are the primary environmental issues linked to clay mining. A significant section of the populace benefits from clay mining and the production of clay products like bricks and tiles, despite causing these environmental problems. Furthermore, thousands of workers in the construction sector and a few families in the traditional pottery industry depend on these clays and the products created from them for their livelihoods. The mining workers on the other side, meanwhile, clearly have a variety of health problems. It is clear that there are several benefits and drawbacks to clay mining processes. In a state like Kerala, which has a dense population, a unique civilization with high aspirations, and a low per capita availability of land and natural resources, this is particularly important. It is composed of minerals that have an earthy appearance and are mostly composed of very small-grained mineral particles. The primary goal of this study is to document the associated problems that result from clay mining.

III OBJECTIVES OF THE STUDY

- Identification of environmental problems of clay mining.
- To find out the health hazards caused to the livelihoods due to the clay mining.

IV METHODOLOGY

The study has been the outcome of both primary and secondary data. Primary data are collected by conducting a survey of 50 samples in Madayi Panchayath. The important secondary sources are Official Publication of Department of Geology, Reports, Economic Review, various Journals.Inorder to analyse the effects of clay mining 50 samples are taken randomly from the natives of Pazhayangadi. A well prepared questionnaire was used to gather information from household. The data was analysed by using various statistical tools like pie diagram, column diagram, and line diagram etc.

V REVIEW OF LITERATURE

A toxic mixture of diesel, mercury, and other chemicals, coal mining waste sludge is poured into unlined slurry dams and eventually seeps into groundwater **(Nanjowe, 2010)**. Overburden placed in valleys can raise the metal load of the water or, in some cases, completely stop the stream. Strip mining has an impact on air quality in a number of ways. Natural particles like lead and arsenic are harmless when found in the ground, but when they are in the air, they can cause respiratory problems or a variety of other negative health effects that can be absorbed via the skin or eaten.

Gopal K. Kadekodi (2010), two variables must be considered in any discussion of illegal mining, especially that of iron ore. First, the essence of the legislation must include the social and environmental advantages that are under its jurisdiction; it cannot be limited to mining rules. Second, because of the nature of economic liberalization and the loosening of governmental laws, the administrative and judicial control measures that are in place are insufficient to prevent his theft.

Christy Rakoczy (2010), mining frequently has catastrophic effects on the ecology. On water, it might have very negative consequences. Mining uses a number of harmful and toxic compounds. These chemicals frequently contaminate ground water. It is more challenging to dispose of chemicals in nearby bodies of water. Chemicals that are released into bodies of water also damage the water and frequently cause aquatic life to go extinct. Aboveground chemical runoff is detrimental to surrounding plants and vegetation.

Debopriya Boss (2011), mining requires large areas of land, which leads to deforestation. Indiscriminate forest clearing for mining results in the loss of habitat for many species. Chemicals still leak into the land and poison the water even when measures are being taken to transfer the trash into the nearby rivers via pipes. It is evident that when toxic materials are discharged into water bodies, the flora and fauna of those bodies of water suffer. Furthermore, the proliferation of insects and other species like mosquitoes is promoted by water-borne diseases brought on by the liquid waste. These effects harm the environment.

VI RESULTS

The data are collected from 50 sample households in the Madayi panchayath, Kannur district. . The data are collected through an interview using a structured questionnaire. The collected data is coded and classified on the basis of age, gender, availability of water, diseases.

Table 1: CLASSIFICATION ON THE BASIS OF EFFECT OF MINING

Mining Problem	No of Respondent	Percentage
Effected	50	100
Not Effected	0	0

Source: survey data

From the table 1 it is clear that out of 50 samples 100% of them are effected by mining activity nearby.

Table 2: CLASSIFICATION ON THE BASIS OF POLLUTION

Type of Pollution	No of Respondent	Percentage
Air Pollution	26	52
Water Pollution	50	100
Soil Pollution	23	46
Noise Pollution	7	14

Source: survey data

From the table 2 it is clear that 100% of the populations are affected by water pollution. About 52% are affected by air pollution, 46% are affected by soil pollution and 14% are affected by noise pollution.

Table 3: CLASSIFICATION ON THE BASIS OF AVAILABILITY OF WATER

Source of Water	No of Respondent	Percentage
Well	8	16
Bore Well	4	8
Municipality	11	22
Others	0	0
Well and Municipality	18	36
Well, Municipality and Other	3	6
Municipality and Other	2	4
Bore well and Municipality	4	8

Source: survey data

From the table 3 it is clear that about 36% of the population depends well and municipality for the source of water. Only 16% of them are depending well and about 8% borewell.22% of population depends on municipality water.

Table 4 : CLASSIFICATION ON THE BASIS OF QUALITY OF WATER

Quality of Water	No of Respondent	Percentage
Polluted	50	100
Non-Polluted	0	0

Source: survey data

From the table 4 it is clear that quality of water available in that area is 100% polluted.

Table 5: CLASSIFICATION ON THE BASIS OF SCARCITY OF WATER

Water Scarcity	No of Respondent	Percentage
Effected	29	58
Not-Effected	21	42

Source: survey data

From the table 5 it is clear that 58% of the populations are facing the scarcity of water and 42% are not affected by the water scarcity.

Table 6: CLASSIFICATION ON THE BASIS OF AVAILABILITY OF SCARCE WATER

Water Scarcity	No of Respondent	Percentage
Rarely	4	13.79
Often	7	24.14
Continuously	18	62.07

Source: survey data

From the table 6 it is clear that out of 58% of the population 62.07% are continuously affected by water scarcity and 13.79% are rarely effected.

Table 7: CLASSIFICATION ON THE BASIS OF AGE

Age Class	No of Patients	Percentage
0-18	9	23.07
18-30	3	7.69
30-45	9	23.07
Above 45	18	46.15

Source: survey data

From the table 7 it is clear that the population at the age of above 45 is mostly effected due to mining that is about 46.15% of the population are affected. 23.07% at the age of 0-18 &30-45 are affected.

Table 8: CLASSIFICATION ON THE BASIS OF GENDER

Sex	No	Percentage
Male	8	20.51
Female	31	79.48
Total	39	100

Source: survey data

In the table 8 it is clear that 79.48% of female are affected from mining and only 20.51% of males are affected.

Table 9: CLASSIFICATION ON THE BASIS OF DISEASE

No	Diseases	No of Patients	Percentage
1	Common Cold	1	2.56
2	Allergy	15	38.46
3	Asthma	9	23.08
4	Allergy & Asthma	7	17.95
5	Allergy & Common Cold	1	2.56
6	Asthma & Common Cold	6	15.38

Source: survey data

From the table 9 it is clear that about 38.46% of the population are having allergenic problem due to mining. 23.08% of population is affected by severe asthma and only 2.56% are affected by common cold. And about 36% are affected by whole of this disease.

Table 10: CLASSIFICATION ON THE BASIS OF NATURE OF DISEASES

Nature of Diseases	No of Patient	Percentage
Chronic	28	71.79
Acute	11	28.20

Source: survey data

The table 10 shows the nature of diseases caused to the natives nearby mining area. And it is clear that about 71.79% are affected by chronic diseases and 28.20% are affected by acute diseases.

Table 11: CLASSIFICATION ON THE BASIS OF TREATMENT

Treatment	No of Respondent	Percentage
Having	37	94.87
Not-Having	2	5.13

Source: survey data

The table 11 shows 94.87% of the population having diseases take treatment for it and only 5.13% are not aware of taking treatment.

Table 12: CLASSIFICATION ON THE BASIS OF PREFERENCEOF HOSPITAL

Name of hospital	Number of respondent	Percentage
Government hospital	17	45.95
Private hospital	9	24.32
Both	11	29.73

Source: survey data

Based on the survey conducted among 50 households 45.95% of them prefer government hospital and only 24.32% prefer private hospital. It is seen that 29.73% of population prefer both government and private hospitals.

Table 13: CLASSIFICATION ON THE BASIS OF CONCESSION RECEIVED

Concession	No of Respondent	Percentage
Having	3	8.11
Not- Having	34	91.89

Source: survey data

From the table 13 it is clear that about 91.89% are not receiving any concession or help from the mining authority. Only 8.11% are getting concession in the treatment.

Table 14: CLASSIFICATION ON THE BASIS OF BENEFITS RECEIVED FROM MINING

Benefits	No of Respondent	Percentage
Employment Opportunities	2	4
Provide Water	4	8

Source: survey data

On the survey conducted among 50 households only 12% are getting benefits because of mining nearby. Mining authority is providing water facility to only 8% and 4% of them are receiving employment opportunities.

Table 15: CLASSIFICATION ON THE BASIS OF PREFERRENCE OF MINING

Mining	No of Respondent	Percentage
Favouring	4	8
Un Favouring	39	78
Partially Supported	7	14

Source: survey data

Based on the survey conducted among 20 households 78% of them are not favouring mining to be continuing. While 14% are partially supported mining because of many reasons. And only 8% are favouring mining to continue nearby.

Table 16: CLASSIFICATION ON THE BASIS OF REASONS FOR FAVOURING

Reasons For Favouring	No of Respondent	Percentage
Revenue to the Government	1	2
Have no effect on stopping	1	2
All the above	2	4

Source: survey data

From the table 16 it is clear that 8% of them are favouring mining. The main reasons behind it are 2% are saying that this is also one of the main sources of revenue to our Government. And 2% are of the opinion that the mining had reached the very extend. It will not have any effect on stopping it now. 4% of them having the same opinion given.

Table 17: CLASSIFICATION ON THE BASIS OF REASONS FOR UNFAVOURING

Reasons For Un-Favouring Mining	No of Respondent	Percentage
Pollution	26	52
Health Hazards	13	26

Source: survey data

It is clear from the table 17 that 78% of them are not favouring mining to be continuing. The reasons for them are mainly pollution and health hazards caused due to mining. About 52% of them are not favouring mining because of pollution and 26% because of health hazards caused to them.

Table 18: CLASSIFICATION ON THE BASIS OF REASONS FOR PARTIALLY SUPPORTING MINING

Reasons for Partially Supporting	No of Respondent	Percentage
Employment Opportunities	7	14

Source: survey data

It is seen that some of them are partially supported mining activity because of the only reason they are one of the income earning source of them and their neighbours. So 14% are partially supporting mining.

Thanks to increased demand and technological developments, mining is now profitable and possible even in the most remote mountain regions. The minerals and metals found in the world's mountains were shaped by the same forces that created them. Mining can be extremely beneficial to mountain communities, but it can also have catastrophic consequences for fragile mountain ecosystems and communities both above and below. Finding a balance between mining opportunities, environmental and social responsibilities, and the preservation of traditional mountain cultures is the challenge. The ecology may suffer during mining operations and for years after the mine is closed due to the nature of mining activities. Most nations throughout the world have enacted legislation to mitigate the negative impacts of mining operations as a result. While modern techniques have significantly improved mine safety, safety has always been a concern.

CONCLUSION

All forms of mining and reclamation only negatively impact agricultural land use, to differing degrees depending on the mining locale. The preservation of the environment typically prevails above socioeconomic needs when it comes to trade-offs. When there are competing needs, it can be quite difficult to decide which environmentally beneficial action is ideal. The mining area's visual appeal will drastically decline.

REFERENCE

- A.C.Maloo(2010), "Industrial Jungle", Downs To Earth- September 1-15 ,2010, Vol.19, No.8, PP:20-29.
- Abhijit Dutta, Sunita Dutta, P.N.Pandey(2005), "Environmental Economics" PP:228-229, Published by:Kul Bhushan Nangia.
- Aboaba Adeniye and Ghadebo.T.Adeola,(2009) " Journal Of Environmental Studies And Management" November 1 2009,Vol 2, 43497-403471-1-PB.(2) Pdf
- Bhargava(2008) "Denotify: Common Demand"- Downs To Earth- April 30 2008, Vol.16,No.23,PP:26-27.
- Christy Rakoczy(2010), "How Does Mining Affect The Environment " http:// answers. Your dictionary.com/science/how- does-mining-affect- environmental .html.
- Cordillera Peoples Alliance(2007) "A Case Study On The Impacts Of Mining And Dams On The Environment And Indigeneous People In Benguet, Cordiller, Phillipines",
- Debopriya Bose(2011), "How Does Mining Affect The Environment" http://www.buzzle.com/ articles/ how- does -mining-affect-the-environment.html.
- Gayathri Singh and Amit Pal(2010), "Environmental Impacts Of Mining On Bundelkhand Region Of Uttar Pradesh, India"
- Gopal. K. Kadekodi(2010), "The Health Of Mining And Wealth Of Miners July 24, 2010, http:epw.in/epw/user/log in Article Error. JSP2.hid article=14988.
- H.M.Saxena(2004), "Environmental Geography"PP:86-88, Edited by: Prem Rawat, Published by: Rawat Publications.
- John Marton(2010), "The Effects Of Mining On The Ecosystem" February 3, 2010, http://www..e how.com/ list-5946932-effect-mining-ecosystem.html.
- Joseph Anthony, Joseph Anthony(1996), "Living On A Minefield" http://www.down to earth.org.in/node/20460
- Jusi, Arnel.F (2001), "Environmental Impact Of Ball Clay Mining In GALLEGO CAMARINES SUR- 2001" http://rsrlibresearch blog spot.com/2008/02/environmental.Impact-of-ball-clay
- Kath(2010), "The Adverse Mining Effect On Environment" - http://Kath mandtocopenhagen. Org/?p=18.
- L.N.Dash(2006), " Mineral Resources And Economic Development Of Orissa"(Study)PP:174-177.
- Mehmet Ekmekcl(1990), "Impact of Quarries On Karst Ground Water System", –iahs-207-0003.pdf
- Muzaffar Assadi(2002), "Karnataka Kudramukh: Of Mining And Environment" ,Economic And Political Weekly, Vol.37,No.49,PP:4898-4901.
- Raj. K. Singhal, John Hadjigeorgiou and Anil. K. Mehrotra, Richard Poulin(1995), "Mine Planning And Equipment Selection 1995; Proceeding Of The Fourth."
- Ramprasad Sengupta(2002), "Ecology And Economics" PP:144, Published by: Manzar Khan, Edited by: Oxford University Press.

- Samuel Ripley(2010), "Environmental Problem With Limestone Quarries" May 12, 2010, http://www.ehow.com/about-6505724-environmental problem-limestone-quarries.
- Surendra Singh Chauhan(2010) "Mining ,Development And Environment: A Case Study Of Bijolia Mining Area In Rajasthan, India."
- W.M.Adams(2009) "Green Development: Environment And Sustainability In A Developing World PP:348-350. Published by Routledge.
- Y. Anjaneyulu(2004), "Introduction To Environmental SciencePP: 110-117,Edited by: Prof.P.Narasimha Rao, Published by:B.S.Publications.