IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

CLOSURE OF GOLD MINES AND IT SOCIO-ECONOMIC EFFECT ON THE LIVELIHOODS OF KOLAR GOLD FIELDS

PALPARTHI RAJESH, M.A., M.Phil., KSET, NET, (Ph. D)
Research Scholar
Department of Economics
Bangalore University
P.G. Centre Kolar

Dr. D. KUMUDA, M.A., M.Phil., Ph.D,
Professor
Department of Economics
Bangalore North University
P.G. Centre, Kolar

Abstract

Kolar Gold Fields is in Bangarpet Taluk, Kolar District of Karnataka state, India, gold was first mined preceding the second and third century AD by digging little pits. The Champion reef at the Kolar gold fields was mined to a profundity of 50 meters (160 ft) during the Gupta time frame in the fifth century AD. During the Chola time frame in the ninth and tenth century AD, the size of the activity grew. The metal kept on being mined by the 11th century lords of South India, the Vijayanagara Empire from 1336 to 1560, and later by Tippu Sultan, the ruler of Mysore state and the British. The oldest mineral industry Pre-historic to present day there was so much interest on gold mining persisted. Old workings for gold are found in different parts of the State. But large scale development of mining persisted only in two places that is Kolar Gold fields and Hutti. The Kolar Gold fields operated 120 years and provided employment for thousands of people and it was closed in 2000. The objective of the study, is socio-economic conditions of the post closure of gold mining. The present study carried by both primary and secondary data and sample size is 100 households of employees and non-employees of Bharth Gold Mines Limited. And the finding includes there is lot of socio-economic and environmental problems, there is also potential for knowledge economy contributed by the mining company by establishment of educational institutions. There is also more income and consumption because of people

traveling towards Bangalore and earning income for their livelihood. The present needs of KGF are good sanitation, employment opportunities and good governance.

Key words: Kolar Gold fields, Hutti gold mines limited, Mining, Environment, Socio-economic.

Introduction

India is sixth position in the world in gold production and produced 19.5 tons during the year 1905, though the production of gold from primary source that is mining during the year 2007 is just 2.490 tons. Kolar mines has produced of 800 tons of gold before its closure in 2001. At present gold is produced from three mines viz Hutti, Uti, Hirabuddni (HGML) in Karnataka and as result from base metal sulphide stores of Khetri (Rajasthan), Mosabani, Singhbhum (Jharkhand) in public sector and Kundrekocha in private in the decreased order. In India, the absolute gold production in the year (2006-07) was 12.82 tons (0.5% of world contribution), of which 2.36 tons is from primary source, 127 kg from base metal mines as by-product, and the remaining 10.34 tons recovered from purifying of imported copper, concentrates by HINDALCO at Dahej in Bharuch region, Gujarat.

Methodology

The study is based on the both the primary and secondary sources. Primary source includes preparing the questionnaire and collected opinion from the people in and surrounding areas of gold mining and the sampling size is 100, the secondary sources include, Various government documents and other related books has been studied intense of knowing problems and gaining knowledge. In this article SPSS and MS Excel also used to analyse, and to present data clearly tables and charts has been used.

Objectives of the study

1. To know why the Kolar gold mining has been closed.
2. To know the socio-economic and environmental effects of the post closure of gold mining.

History of Kolar Gold mining

Kolar, the second deepest (3200 m) gold mine in the world, it completed 120 years and now the Hutti gold field which has witnessed four times of broadly exploration in mining, viz. pre-Asokan (+2000 years of age), Nizam period (1886-1920), 1937 to 1947, and the present mines successfully running from 1947 onwards. The most-deepest (195mters depth and 250m long) known old working in the world is situated in the Main reef at Hutti gold mines.

The historical of the Gold Fields would be inadequate without a record of the firm of John Taylor and Sons. who as mining engineers had a prominent record in mining history. Established in 1798 by Mr. John Taylor, a youthful specialist of Norwich, it led mining activities in all parts of the world. The development and management of the mines of the Kolar Gold Fields were started by a grandson of its founder, and the efficient manner in which it was continued resulted in the industry becoming the largest and a most successful commercial enterprise in then Mysore State. During the three quarters of a century since the organized gold mining in the Kolar Gold Fields started, many mining companies were floated and some of them either failed or were absorbed by their more powerful neighbours and eventually the number of operating mines was reduced to five. In 1931, the Balaghat Mine was taken over by the Nundydroog Company, and in 1953, the Oorgaum Mine was amalgamated with the Champion Reef Mine leaving only three mines.

Nationalization of Gold Mines:

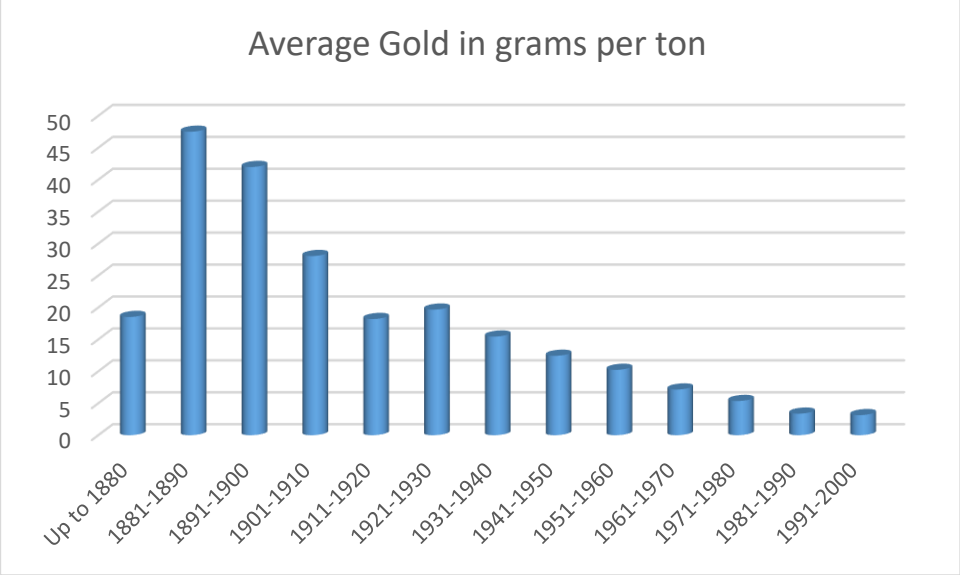
In line with the Mysore Government, new company were framed and enrolled in India in 1950, the Share capital of which was, however, completely claimed by the first British Companies; the spot of business was moved from London to the Kolar Gold Fields and Messrs. John Taylor and Sons framed an subsidiary Indian Company to carry on the administration of the Mines. In 1956, the Government of Mysore declared its expectation to nationalize the gold-mining industry of the Kolar Gold Fields. After certain dealings, it was concurred that the Government should assume control over all the benefits and liabilities of the digging organizations in India for a net installment of Rs. 1,64,00,000. A Bill was as needs be detailed and it was passed by the Mysore State Legislature embodying the terms settled upon and giving significant guarantees and safeguards to all grade employees of the mines.

On 29th November 1956, the administration of the Mines went from the control of the British private undertaking under the control of the Government of Mysore as a national venture and on that day, the then Chief Minister of Mysore S. Nijalingappa, who officially assumed control over the business in the interest of' the State Government. With the passing of the nationalization Act, the firm of Messrs. John Taylor and Sons stopped to be the Managers of the Mines, however were delegated by the Government of Mysore to fill in as Mining Consultants. By the Act of nationalization, the Mysore Government obtained the Mysore Champion Reef and Nundydroog Mines, together with the Kolar Mines Power Station and the Kolar Gold Fields Hospital.

Table-1: Details of Availability of Gold between1881-2000.

Period from To	Average Gold in grams per ton
1881-1890	47.51
1891-1900	41.99
1901-1910	28.05
1911-1920	18.19
1921-1930	19.66
1931-1940	15.44
1941-1950	12.43
1951-1960	10.23
1961-1970	7.15
1971-1980	5.35
1981-1990	3.37
1991-2000	3.14

Up to end of March 2000.

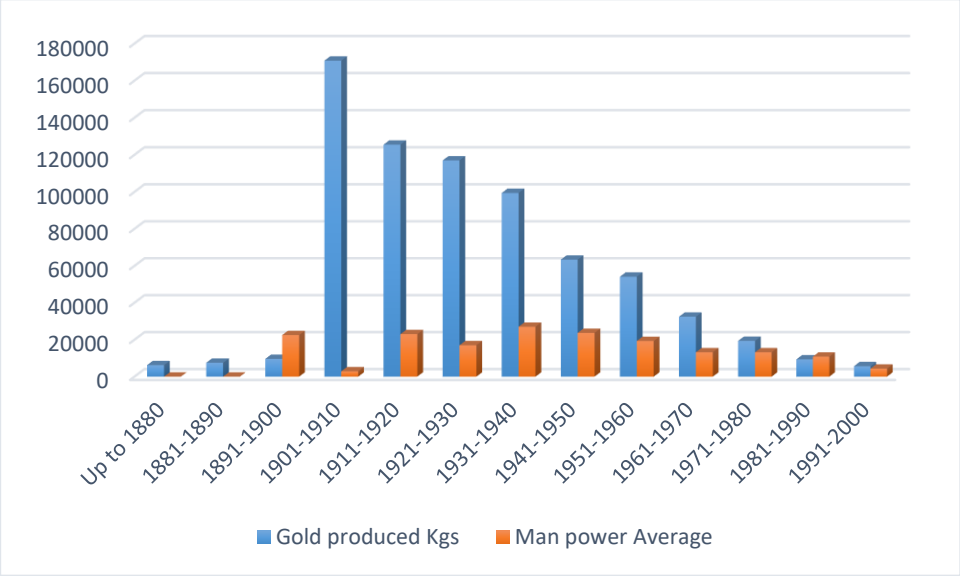


The above data and graph clearly shows reason for gold mining closure, up to 1880 there wasn't systematic extraction of gold from ore. At that time the available gold per ton of ore was 18.51 grams after systematic extraction by the John Tylor company the gold availability was increased as 47.51 grams per ton from gold ore, as more and more extracting the gold the availability was decreased and underground deep was also increased. In the year 2000 the availability of gold per ton ore was 3.14 grams which was very higher then at present running Hutti gold mines company limited. But still it was closed due to operational cost.

Table-2: Production and average manpower employed by K.G.F Mines between 1880-2000.

Period from To	Ore milled Tons	Gold produced Kgs	Man power Average
Up to 1880	336072	6221	no record found
1881-1890	157831	7496	no record found
1891-1900	213473	9627	22500
1901-1910	6090185	170813	2900
1911-1920	6897003	125483	23000
1921-1930	5949093	116980	17000
1931-1940	6440367	99423	27000
1941-1950	5095750	63341	23700
1951-1960	5288643	54126	19300
1961-1970	4540668	32451	13200
1971-1980	3621531	19362	13166
1981-1990	2767136	9327	10846
1991-2000	1804606	5663	4343

Source: KOLAR GOLD FIELD: (unfolding the untold)



In the above table and graph reveals that more gold ore means more gold metal production, but in the process of time as deeper and deeper mining, the ore production also reduced and gold production also reduced in 1911-1920 highest employment that is 2300 people employed and gradually employment also reduced into 4343 in 1991-2000, due to more operational cost the mining has been closed in march 2000. The FCCI report said that there is more tailing that is 32 mt dumps in BGML and it will have considered potential for production of gold 2 tonnes per year and other metals.

Table-3: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1.0	1.0	1.0
Female	53	53.0	53.0	54.0
Male	46	46.0	46.0	100.0
Total	100	100.0	100.0	

Source: Field survey.

As per the table 3 above, 53 people are females and 46 males in the surrounding area of the gold mine.

Table-4: What kind of pollution you have experienced in KGF

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2.0	2.0	2.0
Air pollution	26	26.0	26.0	28.0
All the above	46	46.0	46.0	74.0
Noise Pollution	5	5.0	5.0	79.0
Soil pollution	11	11.0	11.0	90.0
Water Pollution	10	10.0	10.0	100.0
Total	100	100.0	100.0	

Source: Field survey

As per the above Table No.4, it can be understood that 26% is air pollution, 4% is noise pollution, 10% is water pollution,11% is Soil pollution and the rest of the people opinion is that all kinds pollutions.

Table-5: Does Air blasting have any impact on your housing pattern?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1.0	1.0	1.0
No	54	54.0	54.0	55.0
Yes	45	45.0	45.0	100.0
Total	100	100.0	100.0	

Source: Field survey

The above Table No.5: Says that 45% of the respondents are expressed that Air blasting impact on the housing pattern and rest says that no affect anything due to air blast

Table-6: Air blast impact on KGF local community leads

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		2	2.0	2.0	2.0
	All the above	27	27.0	27.0	29.0
	Cracking in the concrete	3	3.0	3.0	32.0
	Cracking the house walls	21	21.0	21.0	53.0
	Cracks in house interior	4	4.0	4.0	57.0
	No-idea	36	36.0	36.0	93.0
	Whole body vibration	7	7.0	7.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

The above Table No-6: says that there is a possible impact on their housing pattern that air blast will cause the Cracking in the concrete 3%, Cracking the house walls 21%, Cracks in house interior 4%, Whole body vibration 7%, and 36% people opinion that that there is no-idea and rest 27% agreed that there is possibility impact of all.

Table-7: Do you think that pollution is the main cause of major health problems?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	18.0	18.0	18.0
	Yes	82	82.0	82.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the above table 7: 82% respondent expressed their opinion that pollution is the major cause of health problems and rest said that there is nil.

Table-8: What is your average household monthly health expenditure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	4.0	4.0	4.0
	1000-2000	21	21.0	21.0	25.0
	2000-3000	11	11.0	11.0	36.0
	3000-5000	9	9.0	9.0	45.0
	500-1000	20	20.0	20.0	65.0
	5000 and above	21	21.0	21.0	86.0
	Less than 500	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the above table 8: nearly 21% of people spending 1000-2000 of their monthly expenditure for health purpose and 3000- 5000 money spending 9%, 500-1000 money spending 20%, 5000 and above 21% people found during researcher investigation.

Table-9: Have you ever experienced water pollution in your locality?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	3.0	3.0	3.0
	No	41	41.0	41.0	44.0
	Yes	56	56.0	56.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the above table No.9: 56% respondent also expressed their opinion that they are experienced water pollution and rest 41% says no such water pollution. Also respondent said water pollution is due to abandoned underground mining, each acid drainage, and tailing ponds.

Table-10: The distance that you are travelling to work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		6	6.0	6.0	6.0
	10-20kilometers	6	6.0	6.0	12.0
	100km	1	1.0	1.0	13.0
	120 kilometres	1	1.0	1.0	14.0
	21-30kilometers	6	6.0	6.0	20.0
	31-40kilometers	3	3.0	3.0	23.0
	50-70kilometers	1	1.0	1.0	24.0
	70 kilometres and above	27	27.0	27.0	51.0
	85 kilometers	1	1.0	1.0	52.0
	I'm not working	1	1.0	1.0	53.0
	Less then 10 kilometers	37	37.0	37.0	90.0
	Not working	1	1.0	1.0	91.0
	Relocated only for job	1	1.0	1.0	92.0
	Student	8	8.0	8.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the above table No.10: it revealed that due to closure of mining people traveling 30 kilo meter to 120 kilometres towards Bangalore as daily travellers remaining less than 30 kilometres who traveling for work to Bangarpet Mulbagal and other small villages as teachers and other daily wage workers.

Table-11: What is your commonly faced challenges (problems) in the area (KGF)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	3.0	3.0	3.0
	all the above	30	30.0	30.0	33.0
	Health problems	9	9.0	9.0	42.0
	Lack of education	1	1.0	1.0	43.0
	No good leader	1	1.0	1.0	44.0
	Lack of social awareness	1	1.0	1.0	45.0
	lack of social awareness	8	8.0	8.0	53.0
	sanitation problem	1	1.0	1.0	54.0
	Unemployment	37	37.0	37.0	91.0
	No proper house	3	3.0	3.0	94.0
	sanitation problem	6	6.0	6.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the Above Table No-11: says that due to mining closure people suffering Unemployment 37% and other Health problem9%, Lack of education 2%, Lack of social awareness1%, sanitation problem7% etc.

Table-12: In your family how many members employed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		8	8.0	8.0	8.0
	0	1	1.0	1.0	9.0
	1	44	44.0	44.0	53.0
	2	18	18.0	18.0	71.0
	3	9	9.0	9.0	80.0
	4	5	5.0	5.0	85.0
	5	7	7.0	7.0	92.0
	6	2	2.0	2.0	94.0
	7	1	1.0	1.0	95.0
	8	1	1.0	1.0	96.0
	9	1	1.0	1.0	97.0
	No one are employed	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

Source: Field survey

In the above table No.12: due to mining closure in 44% opinion that their home only one person is working, remaining all the household more than one person is working, it was found in a joint family 9 members are working during investigation.

Findings

1. It was found that the closure gold mining is more cost of production due to low availability of gold per ton ore and very deep underground mining.
2. It is found that 53 people are females and remaining is males and all the respondent are married
3. All of the respondents say that they have notices pollution in the locality and they noticed air, noise, water, sound pollution in their locality.
4. 45% of the respondents are expressed that Air blasting impact on the housing pattern and rest says that no affect anything due to air blast.
5. The impact of air blast leads to Cracking in the concrete, Cracking the house walls, Cracks in house interior, Whole body vibration, and 36% people opinion that that there is no-idea and rest 27% agreed that there is possibility impact of all.
6. It is found that 82% respondent expressed their opinion that pollution is the major cause of health problems and rest said that there is nil.

7. It is found that 21% of people spending 1000-2000 of their monthly expenditure for health purpose and 3000- 5000 money spending 9%, 500-1000 money spending 20%, 5000 and above 21%.
8. 56% respondent also expressed their opinion that they are experienced water pollution and rest 41% says no such water pollution. Also respondent said water pollution is due to abandoned underground mining, each acid drainage, and tailing ponds.
9. It is found that due to closure of mining people traveling 30 kilo meter to 120 kilometres towards Bangalore as daily travellers remaining less than 30 kilometres who traveling for work for their livelihood.
10. It is found that mining closure people suffering Unemployment 37% and other Health problem 9%, Lack of education 2%, Lack of social awareness1%, sanitation problem7% etc.
11. Post closure of mining 44% opinion that their home only one person is working, remaining all the household more than one person is working, it was found in a joint family 9 members are working during investigation.

Suggestions

1. Since BGML completed and it has more tailings that is 32mt and it will have considered potential for production of gold 2 tonnes per year and other metals and considered more employment opportunities for residence of KGF people.
2. There is needed for proper environmental pollution control measures by the government or else it will create more health problems leads to more health expenditure.
3. There is required need to establish alternative industries in the mining and the surrounding areas so it will provide employment opportunities and will reduce the people travel longer distance to Bangalore and can able to spend more time with family and create a harmonious society.

Conclusion

In India Karnataka is the only leading producer of gold that to Kolar Gold Fields from pre-independence and employed thousands of people. As the deeper underground mining leads to more cost of production which ultimately resulted in closing of gold mining in 2000. Now the citizens of the KGF people facing lot of socio-economic problems, one of the advantage part of being closed is that in each family more than one person is working, earlier only one person working that is head of the house hold. Due to more English people lived in KGF it is being called as mini England there is more potential for establishment of modern industries. The FCCI report said that there is more tailing that is 32 mt dumps in BGML and it will have considered potential for production of gold 2 tonnes per year and other metals, and it will provide more employment opportunities in and surrounding areas of gold mines and it will reduce the more dependence on traveling hundreds of kilometres towards Bangalore for employment purpose.

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